

1420
THE
NAUTICAL ALMANAC

AND
ASTRONOMICAL EPHEMERIS,

FOR THE YEAR 1772.

Published by ORDER of the

COMMISSIONERS OF LONGITUDE.

L O N D O N :

Printed by RICHARDSON and C^o.

PRINTERS;

AND SOLD BY

J. NOURSE, in the Strand, and Mess. MOUNT and PAGE
on Tower-Hill,

Booksellers to the said COMMISSIONERS.

M DCC LXX.

[Price Three Shillings and Six Pence.]



EXTRACT from the Act of Parliament
concerning the Longitude, made in the
Fifth Year of the Reign of his present
Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorized by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of his Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to his Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.

EXTRACT



60.9

EXTRACT from the late Act of Parliament concerning the Longitude, made in the Tenth Year of the Reign of his present Majesty.

BE it Enacted by the King's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That the said Commissioners constituted by the said several Acts before-mentioned for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same, or any Five or more of them, shall have full Power to hear and receive any Proposal or Proposals that have been, or that shall hereafter be made to them for discovering the said Longitude at Sea; or for improving the said [Professor Mayer's] Lunar Tables; or for making any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Proposal, as to think it proper to make Experiment thereof, or of the Utility of such Discovery or Improvement, as to think the same deserving of Reward, they shall certify the same under their Hands and Seals to the Commissioners of the Navy for the Time being, together with the Names of the Person or Persons who shall be the Author or Authors of such Proposal or Proposals, or who shall make such Discovery or Discoveries, Improvement or Improvements; and, upon producing such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills for any such Sum or Sums of Money, not exceeding in the Whole the Sum of Five thousand Pounds, as the said Commissioners for the Discovery of the said Longitude, or any Five or more of them, shall think necessary for making any Experiments, or for giving any Reward or Rewards, Sum or Sums of Money, to such Person or Persons as shall improve the said Lunar Tables, or shall make any Discovery or Discoveries, Improvement or Improvements useful to Navigation, in pursuance of this Act, or any of the said Acts herein before-mentioned, payable by the Treasurer of the Navy; which Sum or Sums of Money the Treasurer of the Navy for the Time being is hereby authorized and required to pay immediately to the Person or Persons mentioned in the said Certificate or Certificates, out of any Money that shall be in his the said Treasurer's Hands unapplied for the Use of the Navy: Provided always, That if any such Reward or Sum of Money shall exceed the Sum of One thousand Pounds, then, and in that Case, the same shall be certified under the Hands and Seals of the major Part of the said Commissioners for the Discovery of the said Longitude.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we have employed proper Persons to compute Nautical Almanacs and Astronomical Ephemerides for the Years 1771 and 1772, which will greatly contribute to make the Lunar Tables constructed by the late Professor MAYER of *Göttingen* (which you have already printed with our Authority) more generally useful; and whereas we think fit to employ you to print the said Nautical Almanacs and Astronomical Ephemerides: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to cause the same to be printed, together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as shall have been constructed under our Direction, and will be delivered to you by the Reverend Mr. NEVIL MASKELYNE, his Majesty's Astronomer Royal at *Greenwich*; and for so doing this shall be your sufficient Warrant. Given under our Hands and Seals this 18th of *June* 1769.

To Mess. WILLIAM
RICHARDSON and
SAMUEL CLARK,
Printers in *Salisbury-
court, Fleet-street,*

ED. HAWKE (L.S.)
JOHN CUST (L.S.)
HOWE (L.S.)
C. KNOWLES (L.S.)
F. HOLBURNE (L.S.)
N. MASKELYNE (L.S.)
A. SHEPHERD (L.S.)
T. HORNSBY (L.S.)
G. B. RODNEY (L.S.)
T. SALUSBURY (L.S.)
GREY COOPER (L.S.)
T. BRADSHAW (L.S.)
P. STEPHENS (L.S.)

By Command of the Commissioners,

JOHN IBBETSON, Secretary.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you to publish and vend, and to cause to be published and vended, the Nautical Almanacs and Astronomical Ephemerides for the Years 1771 and 1772, together with other useful Tables (constructed under our Direction) for facilitating the Method of discovering the Longitude at Sea, which will be printed by Messieurs RICHARDSON and CLARK of *Salisbury-court, Fleet-street*: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and impower you to publish and vend, and to cause to be published and vended, the said Nautical Almanacs and Astronomical Ephemerides, together with the other useful Tables above-mentioned. For which this shall be your sufficient Warrant. Given under our Hands and Seals this 18th of *June* 1769.

	ED. HAWKE (L.S.)
	JOHN CUST (L.S.)
	HOWE (L.S.)
	C. KNOWLES (L.S.)
	F. HOLBURNE (L.S.)
To Mr. JOHN NOURSE,	N. MASKELYNE (L.S.)
Bookseller in the <i>Strand</i> .	A. SHEPHERD (L.S.)
	T. HORNSBY (L.S.)
	G. B. RODNEY (L.S.)
	T. SALUSBURY (L.S.)
	GREY COOPER (L.S.)
	T. BRADSHAW (L.S.)
	PH. STEPHENS (L.S.)

By Command of the Commissioners,

JOHN IBBETSON, Secretary.

☞ A Licence was also granted to the like Effect to Mess. JOHN MOUNT and THOMAS PAGE, Stationers on *Tower-hill*.

P R E F A C E.

THE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Publick with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1772, being the Sixth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Publick in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER of Gottingen to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculus; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published among the Tables
requisite

P R E F A C E.

requisite to be used with the EPHEMERIS; or by either of the Two Methods annexed to this EPHEMERIS, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL.

By Desire of the Commissioners of Longitude, I drew up the Explanation and Use of the Articles contained in the EPHEMERIS, and the Instructions, with Examples, for finding the Longitude at Sea by the Help of the same. I also collected and calculated the Sixteen First Pages of Tables requisite to be used with the EPHEMERIS, and computed the Table of proportional Logarithms, which seemed to me absolutely necessary to clear this Method of any remaining Difficulty; and added Explanations of all the Tables, and a Correction, p. 49 and 50, which may be applied by the Curious to the Effect of Refraction on the Moon's Distance from a Star, found by Mr. LYONS, or any other Method, on account of the Barometer and Thermometer.

All the Calculations of the EPHEMERIS relating to the Sun and Moon were made from Mr. MAYER's last manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my Inspection, and published lately. The Calculations of the Planets were made from Dr. HALLEY's Tables; and those of the Eclipses of Jupiter's Satellites from the Tables of Mr. WARGENTIN, published by M. DE LA LANDE in 1759, except those of the Fourth Satellite, which were calculated from the Tables of the
same

P R E F A C E.

same further improved by Mr. WARGENTIN, and published also by M. DE LA LANDE in the CONNOISSANCE DES MOUVEMENTS CELESTES of 1766.

All the Articles of the EPHEMERIS were computed by Two separate Persons, and examined by a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which, for Noon, were computed by One Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

The Latitude and Longitude of the LIZARD POINT, having never been determined by astronomical Observations made on the Spot or very near it, remained in some Degree uncertain. I had attempted, in my BRITISH MARINER'S GUIDE, to deduce its Longitude, by comparing its Position with LESKEARD in CORNWALL by the Help of such Maps as I had at hand, the Longitude of that Place being determined from the Observation of the Transit of VENUS in 1761, observed there by the Rev'd Mr. HAYDON: But, the Distance being considerable, and having no Reason to think the Maps I used were to be much depended on, I only flattered myself that I had reduced the Uncertainty about the true Longitude of the LIZARD into smaller Limits.

The Longitude, thus found, was $5^{\circ} . 43'$ west of GREENWICH, or $24'$ greater than the common Account; and, esteeming it most certain of the two, I made use of it for comparing with the Longitudes

P R E F A C E.

Longitudes which I inferred from my Observations of Distances of the Moon from several fixed Stars, with HADLEY's Quadrant, near or in Sight of the SCILLY and LIZARD Lights, in my Voyage from ST. HELENA in 1762, altho' it made the greatest Error, in the Longitude deduced from my Observations appear more by 24' than if I had used the common Longitude of these Places; the greatest Error by the corrected Longitude being 51', which by the common Longitude would have been only 27'. But considering the Matter since, and particularly that the Longitude observed was less than the corrected Longitude in Three Nights Observations, and agreed with it only in a Fourth, I could not help suspecting that I might have been led into a Mistake in stating the Longitude of the LIZARD and SCILLY Isles too great from Mr. HAYDON's Observation, owing to the Badness of the Maps which I made use of; and therefore wished that some good astronomical Observations might be made at the LIZARD, in order to settle its true Position.

The Board of Longitude, to whom I proposed my Doubts, being sensible of the Importance of determining the Position of a Place of so much Consequence in the BRITISH Navigation, resolved that the proper astronomical Observations should be made at the LIZARD for that Purpose; and the late Transit of VENUS appeared a convenient Opportunity, itself affording one of the best Means of determining the Longitude of Places, and the Eclipse of the Sun, which was to happen the Morning after, affording another Means of determining the Longitude not inferior to the former.

Accordingly

P R E F A C E.

Accordingly Mr. JOHN BRADLEY, Nephew of the late Dr. BRADLEY, and formerly his Assistant at the Royal Observatory, now Second Master at the Royal Academy at PORTSMOUTH, was appointed to make these Observations. The Instruments, which he was provided with, were an Equal Altitude and Transit Instrument in one, an Astronomical Quadrant, and a Reflecting Telescope of Two Feet Focus, all made by Mr. BIRD; and an Astronomical Clock, with a Gridiron Pendulum, made by Mr. SHELTON; and the Observatory, in which they were placed, was a wooden one, formerly erected at PORTSMOUTH for Mr. BRADLEY's Use in making astronomical Observations on account of the Trial of Mr. HARRISON's Watch, and was now removed to the LIZARD on this Occasion by Order of the Lords of the Admiralty.

Mr. BRADLEY was lucky enough in the Course of 51 Days which he staid at the LIZARD; viz. from MAY 13th to JULY 3d, to make a great many Observations; viz. the Two Contacts of Venus at the Ingress; the Beginning and End of the Eclipse of the Sun; Two Emerfions of the First Satellite of Jupiter, One of the Second and One of the Third; Twelve Transits of the Moon over the Meridian; and Eleven Meridian Altitudes of the Moon; besides equal Altitudes for the Going of the Clock, and Meridian Altitudes of the Sun and fixed Stars. All which, by their Number and Exactness, are sufficient to determine both the Latitude and Longitude of the Place, not only for its Use as a Headland, but perhaps nearer than the Situations of many Places are known, where astronomical Observations have been made
for

P R E F A C E.

for several Years. Mr. BRADLEY also made several curious Observations of the Depression of the Horizon of the Sea at various Altitudes above its Level.

The Result of some of the principal Observations is here given, and the others shall be given at another Opportunity.

By Meridian Altitudes of the Sun and Pole Star the Latitude of the Place is $49^{\circ} 57' 30''$. N.

Transit of VENUS and Eclipse of the SUN.

Apparent Time,		
1769,		
June 3d.	$6^h.50'.7'',4$	External Contact of Venus very exact, the Eye being fixed on the Place.
7.	8. 25	Internal Contact of Venus, doubtful to 4 or $5''$, a Cloud having hid Venus so long, and at its going off, $2''$ after the Time set down, a Thread of Light appeared very distinct between the Circumferences of the Sun and Venus
18.	14. 54	Begin. of the Eclipse of the Sun.
19.	57. 17	End of the same.
		} Both very good.

These Observations were made with the Two-foot Reflector, and the Magnifying Power 120.

P R E F A C E.

June 8. 9^h. 20'. 14" Em. 1st Sat. of Jupiter.

Jupiter had not been from under the Clouds 10" when he saw the Satellite, yet he reckons the Observation good.

June 15, 11. 13. 46 Em. 1st Sat. of Jup. There

was a thin Haze about Jupiter, but the Observation pretty good.

The same Telescope, but with the Magnifying Power of 100, was used for these Emerfions.

Comparing the above Observations with my own made at GREENWICH, making a small Allowance for the Difference of Parallax at GREENWICH and the LIZARD in the Transit of Venus, and in the Difference of Brightness of the Telescopes in the Emerfions of the 1st Satellite; I find the Difference of Meridians of GREENWICH and the LIZARD by the external Contact of Venus 20'. 53". of Time; by the internal Contact 21'. 1". by the First Emerfion 21'. 7". and by the Second Emerfion 21'. 52". Till I have Time to compare the other Observations, I shall take 21'. 0" of Time = 5°. 15'. of the Equator for the Difference of Longitude of the LIZARD west of GREENWICH, which agrees nearly with the common Accounts.

Since making the above Inference I have consulted MARTIN's Map of CORNWALL, said to be very exact, and find that the Difference of Longitude of LESKEARD and the LIZARD by it should be 43'. 6". which, added to 4°. 41'. 15". the Longitude of LESKEARD, should give 5°. 24'. 21". for the Longitude

P R E F A C E.

Longitude of the LIZARD deduced from Mr. HAYDON's Observations in 1761, which agrees Three times nearer with my present Determination than with my former one in the BRITISH MARINER'S GUIDE, which was affected by the Error of a bad Map of CORNWALL.

Before I conclude, let me correct a similar Error in the Longitude of the Cape Point or Promontory, as laid down in p. 157 of the Explanation of the Ephemeris, arising from a similar Cause, the faults of bad Charts. By consulting the Memoires of the Royal Academy of Sciences at PARIS for 1751, I find the Abbe DE LA CAILLE says, that the Point of Land, which forms the Cape, properly speaking, is under the same Meridian with the CAPE TOWN, and in Latitude 29' South of it, as he has found by Observations made on Purpose. Hence, with the Help of the Chart of the CAPE OF GOOD HOPE and the Places adjacent, annexed to the Observations of the Abbe DE LA CAILLE in the said Memoires, I find the Latitude and Longitude of the principal Points to be as follows.

	Latitude South.	Long. east of Green- wich.
	D. M.	D. M.
Cape Town — — — — —	33. 55	18. 23
Cape Point — — — — —	34. 29	18. 23
Cape False or Hanglip — — — — —	34. 16	18. 44
False Bay — — — — —	34. 10	18. 33
Saldanha Bay — — — — —	33. 10	17. 59
Dassen Island — — — — —	33. 25	18. 2
Hout Bay — — — — —	34. 3	18. 19

To

P R E F A C E.

To this EPHEMERIS are also annexed the Eclipses of the Third Satellite of Jupiter in the Years 1771 and 1772, computed from the new Tables published with the NAUTICAL ALMANAC of 1771, the Eclipses set down in the EPHEMERIS itself for these Two Years having been done before from the old Tables. For the future these Computations in the EPHEMERIS will be made from the new Tables.

In order to find more readily what Eclipses of Jupiter's Satellites will happen when Jupiter is at least 8° above, and the Sun as much below the Horizon, which are distinguished with Asterisks, Two Tables are here added; One containing Jupiter's Hour-angles to different Declinations when his Altitude is exactly 8° , and the other the Sun's Hour-angle or Time from Noon, when he is depressed 8° below the Horizon: It is plain that if Jupiter's Hour-angle at any time is equal to or less than what corresponds in the Table to his given Declination, that Jupiter will be 8° high or more; and that if the Sun's Hour-angle at any time is equal to or greater than what is set down in the Table against his Declination, that the Sun will be 8° or more below the Horizon: Whence it will be easy to know what Eclipses of Jupiter's Satellites can be conveniently observed at GREENWICH, and should be distinguished with Asterisks in the EPHEMERIS.

Lastly, Mr. LYONS's Solution of a Problem in MERCATOR's NAVIGATION, proposed formerly by Dr. HALLEY as wanting to complete that Doctrine, cannot but be acceptable to the Curious.

NEVIL MASKELYNE,
ASTRONOMER ROYAL.

EXPLANATION of the Characters used in the EPHEMERIS.

The PLANETS, &c.

- | | |
|---|------------|
| ☉ The Sun. | ♂ Mars. |
| ☾ The Moon. | ♃ Jupiter. |
| ☿ Mercury. | ♄ Saturn. |
| ♀ Venus. | |
| ♊ The Moon's, or any other Planet's Ascending Node. | |
| ♋ The Descending Node. | |
| ♌ Conjunction, or Planets situated in the same Longitude. | |
| ♍ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other. | |

Signs of the Zodiac.

- | | |
|--------------|-------------------|
| S. | S. |
| 0. ♈ Aries. | 6. ♎ Libra. |
| 1. ♉ Taurus. | 7. ♏ Scorpio. |
| 2. ♊ Gemini. | 8. ♐ Sagittarius. |
| 3. ♋ Cancer. | 9. ♑ Capricornus. |
| 4. ♌ Leo. | 10. ♒ Aquarius. |
| 5. ♍ Virgo. | 11. ♓ Pisces. |

ECLIPSES for the YEAR 1772.

April 17.	☾ totally eclipsed, invisible :	H. M.
	Beginning of the Eclipse — — —	2. 17½
	Beginning of total Darknesh — — —	3. 14½
	Middle — — — — —	4. 4½
	End of total Darknesh — — —	4. 54¾
	End of the Eclipse — — —	5. 52
	Digits eclipsed — — —	21°. 18'

Sept. 26. ☉ eclipsed invisible in *Europe* :

♌ at 12^h. 23'. in 4°. 24'. of ♋; ☾'s Latitude 1°. 24'½. South. This Eclipse will be visible only in Places near the South Pole.

Oct. 11.

ECLIPSES for the YEAR 1772.

Octob. 11. ☽ totally eclipsed, partly visible: H.M.

Beginning of the Eclipse — — — 3. 29

Beginning of total Darknes — — — 4. 35

Middle — — — — — 5. 27

☽ rises — — — — — 5. 28

End of total Darknes — — — — 6. 19

End of the Eclipse — — — — 7. 25

Digits eclipsed — — 19°. 46'

Octob. 25. ☉ eclipsed, visible: H.M.

Beginning — — — — — 20. 23

Greatest Obscuration — — — — 20. 31

End — — — — — 20. 39

Digits eclipsed — — 0°. 6 $\frac{1}{3}$ '

Obliquity of Ecliptic. Equat. of Equin. Points.

1772.	•	'	"	"
Jan. 1. —————	23. 28.	0,7	—————	+ 10,2
Apr. 1. —————	23. 28.	0,2	—————	+ 9,0
July 1. —————	23. 27.	59,6	—————	+ 7,6
Oct. 1. —————	23. 27.	59,2	—————	+ 6,2
Dec. 31. —————	23. 27.	58,8	—————	+ 4,7

ERRATA.

P. 2. Jan. 4. Sun's Right Ascens. for 19'. read 59'.

P. 22. Feb. 28. Noon, ☽ from Spica ♋, for 85° read 83°.

JANUARY 1772.

[1]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			New Moon — 4. 11. 42
			First Quarter — 12. 14. 56
			Full Moon — 19. 22. 36
			Last Quarter — 26. 14. 12
			Other Phenomena.
			D.
1	W.	Circumcision.	1. ☾ β ♀ 2 ^h . 14'.
2	Th.		☾ γ ♀ 4 ^h . 53'.
3	F.		5. ☽ 24 ♀ diff. Lat. 26'.
4	Sa.		☾ β ♀ 18 ^h . 41'.
5	Su.	1 st Sund. after Circumcif.	6. ☽ 2 ♀ diff. Lat. 58'.
6	M.	Epiphany.	8. ☽ ♀ ♀ diff. Lat. 1° 13'.
7	Tu.		11. ☾ δ ♂ 15 ^h . 33'.
8	W.	Lucian.	☾ ε ♂ 22 ^h . 24'.
9	Th.		13. ♀ Stationary.
10	F.		16. ☾ ε ♂ 0 ^h . 52'.
11	Sa.		17. ♀ γ ♀ diff. Lat. 57'.
12	Su.	1 st Sund. after Epiphany.	19. ♀ δ ♀ diff. Lat. 57'.
13	M.	Hilary. Cam. T. begins.	☾ enters ☾ at 21 ^h . 40'.
14	Tu.	Oxford Term begins.	20. ☾ ι ad α ☽ Im. 14 ^h .
15	W.		29'. Em. 15 ^h . 15'.
16	Th.		* passes 11½'. N. of
17	F.	[kept. Prisca.	♄'s Center,
18	Sa.	2. Charlotte's birth-day	☾ 2 ad α ☽ 15 ^h . 29'.
19	Su.	2d Sund. after Epiphany.	☾ κ ☽ 19 ^h . 34'.
20	M.	Fab. In 8 days of S. Hil.	21. ☾ π ♀ 16 ^h . 42'.
21	Tu.	St. Agnes. [1 ret.	23. ♀ ι ☽ diff. Lat. 29'.
22	W.	Vincent.	25. ☾ α ♀ 10 ^h . 21'.
23	Th.	Hilary Term begins.	26. ☾ λ ♀ 8 ^h . 56'.
24	F.		☾ α ☽ 23 ^h . 10'.
25	Sa.	Conversion of St. Paul.	28. ☾ β ♀ 7 ^h . 24'.
26	Su.	3d Sund. after Epiphany.	☾ γ ♀ 10 ^h . 14'.
27	M.	From St. Hil. in 15 days,	
28	Tu.	[2 ret.	
29	W.		
30	Th.	K. Charles I. martyr.	
31	F.		

[2] JANUARY 1772.						
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	9. 10. 44. 1.	18. 46. 43, 0	23. 1. 56	3. 58, 7	28, 5
2	Th.	9. 11. 45. 26	18. 51. 8, 1	22. 56. 46	4. 27, 2	28, 1
3	F.	9. 12. 46. 39	18. 55. 32, 9	22. 51. 8	4. 55, 3	27, 7
4	Sa.	9. 13. 47. 51	18. 19. 57, 1	22. 45. 4	5. 23, 0	27, 2
5	Su.	9. 14. 49. 3	19. 4. 21, 0	22. 38. 32	5. 50, 2	26, 8
6	M.	9. 15. 50. 15	19. 8. 44, 4	22. 31. 34	6. 17, 0	26, 3
7	Tu.	9. 16. 51. 27	19. 13. 7, 3	22. 24. 8	6. 43, 3	25, 7
8	W.	9. 17. 52. 39	19. 17. 29, 7	22. 16. 17	7. 9, 0	25, 3
9	Th.	9. 18. 53. 50	19. 21. 51, 5	22. 7. 59	7. 34, 3	24, 6
10	F.	9. 19. 55. 0	19. 26. 12, 8	21. 59. 15	7. 58, 9	24, 1
11	Sa.	9. 20. 56. 9	19. 30. 33, 5	21. 50. 5	8. 23, 0	23, 5
12	Su.	9. 21. 57. 18	19. 34. 53, 6	21. 40. 30	8. 46, 5	22, 7
13	M.	9. 22. 58. 25	19. 39. 13, 1	21. 30. 30	9. 9, 2	22, 2
14	Tu.	9. 23. 59. 32	19. 43. 31, 8	21. 20. 4	9. 31, 4	21, 4
15	W.	9. 25. 0. 38	19. 47. 49, 9	21. 9. 15	9. 52, 8	20, 8
16	Th.	9. 26. 1. 43	19. 52. 7, 2	20. 58. 1	10. 13, 6	20, 0
17	F.	9. 27. 2. 48	19. 56. 23, 9	20. 46. 24	10. 33, 6	19, 4
18	Sa.	9. 28. 3. 51	20. 0. 39, 8	20. 34. 22	10. 53, 0	18, 5
19	Su.	9. 29. 4. 53	20. 4. 54, 9	20. 21. 58	11. 11, 5	17, 8
20	M.	10. 0. 5. 55	20. 9. 9, 3	20. 9. 10	11. 29, 3	17, 1
21	Tu.	10. 1. 6. 56	20. 13. 23, 0	19. 56. 0	11. 46, 4	16, 3
22	W.	10. 2. 7. 56	20. 17. 35, 9	19. 42. 28	12. 2, 7	15, 5
23	Th.	10. 3. 8. 55	20. 21. 48, 1	19. 28. 34	12. 18, 2	14, 8
24	F.	10. 4. 9. 54	20. 25. 59, 5	19. 14. 18	12. 33, 0	14, 0
25	Sa.	10. 5. 10. 52	20. 30. 10, 1	18. 59. 40	12. 47, 0	13, 2
26	Su.	10. 6. 11. 50	20. 34. 19, 8	18. 44. 43	13. 0, 2	12, 4
27	M.	10. 7. 12. 46	20. 38. 28, 8	18. 29. 24	13. 12, 6	11, 6
28	Tu.	10. 8. 13. 42	20. 42. 37, 0	18. 13. 46	13. 24, 2	10, 8
29	W.	10. 9. 14. 37	20. 46. 44, 5	17. 57. 47	13. 35, 0	10, 0
30	Th.	10. 10. 15. 32	20. 50. 51, 1	17. 41. 30	13. 45, 0	9, 2
31	F.	10. 11. 16. 26	20. 54. 56, 8	17. 24. 54	13. 54, 2	8, 4

JANUARY 1772.

[3]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 19, 2	1. 10, 9	2. 32, 9	9. 992663	7. 4. 46
7	16. 19, 1	1. 10, 6	2. 32, 8	9. 992728	7. 4. 27
13	16. 18, 9	1. 10, 1	2. 32, 8	9. 992855	7. 4. 8
19	16. 18, 3	1. 9, 5	2. 32, 6	9. 993063	7. 3. 49
25	16. 17, 6	1. 8, 9	2. 32, 4	9. 993372	7. 3. 30

The Eclipses of JUPITER's Satellites will not be visible this Month, JUPITER being too near the SUN.

[4] J A N U A R Y 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 6^d. Inf. ♂ 22^d. 5^h $\frac{3}{4}$.

1	11. 27. 46	5. 12 S	9. 28. 38	1. 39 S	22. 4 S	1. 18
7	0. 29. 21	1. 59 S	10. 5. 54	0. 40 S	19. 27	1. 21
13	2. 5. 40	2. 23 N	10. 9. 14	0. 55 N	17. 5	1. 6
19	3. 13. 15	5. 53	10. 6. 12	2. 44	16. 8	0. 27
25	4. 17. 25	6. 59	9. 28. 57	3. 35	16. 53	23. 31

V E N U S.

1	10. 21. 8	3. 7 S	9. 27. 47	1. 24 S	22. 0 S	1. 14
7	11. 0. 38	3. 17	10. 5. 17	1. 31	20. 27	1. 18
13	11. 10. 9	3. 23	10. 12. 48	1. 34	18. 29	1. 23
19	11. 19. 41	3. 23	10. 20. 18	1. 36	16. 15	1. 27
25	11. 29. 13	3. 17	10. 27. 47	1. 33	13. 43	1. 32

M A R S.

1	8. 23. 46	1. 5 S	9. 0. 35	0. 39 S	24. 7 S	23. 15
7	8. 27. 11	1. 10	9. 5. 5	0. 42	24. 4	23. 8
13	9. 0. 40	1. 15	9. 9. 40	0. 45	23. 52	23. 2
19	9. 4. 10	1. 20	9. 14. 15	0. 48	23. 31	22. 56
25	9. 7. 41	1. 24	9. 18. 50	0. 51	22. 59	22. 51

J U P I T E R. ♂ 29^d. 12^h.

1	10. 7. 16	0. 38 S	10. 3. 4	0. 32 S	20. 1 S	1. 35
7	10. 7. 47	0. 39	10. 4. 28	0. 32	19. 41	1. 14
13	10. 8. 19	0. 40	10. 5. 52	0. 33	19. 22	0. 54
19	10. 8. 50	0. 40	10. 7. 16	0. 33	19. 0	0. 34
25	10. 9. 22	0. 41	10. 8. 41	0. 34	18. 39	0. 15

S A T U R N.

1	4. 24. 42	1. 22 N	4. 29. 18	1. 29 N	13. 7 N	15. 18
7	4. 24. 55	1. 22	4. 29. 0	1. 30	13. 15	14. 50
13	4. 25. 8	1. 23	4. 28. 40	1. 32	13. 23	14. 23
19	4. 25. 21	1. 23	4. 28. 19	1. 33	13. 31	13. 57
25	4. 25. 34	1. 24	4. 27. 56	1. 34	13. 40	13. 30

J A N U A R Y 1772.

[5]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	7. 28. 46. 15	8. 5. 25. 59	1. 57. 28 N	2. 29. 16 N
2	Th.	8. 12. 3. 6	8. 18. 37. 36	2. 58. 47	3. 25. 39
3	F.	8. 25. 9. 21	9. 1. 38. 17	3. 49. 36	4. 10. 23
4	Sa.	9. 8. 4. 14	9. 14. 27. 10	4. 27. 43	4. 41. 34
5	Su.	9. 20. 47. 3	9. 27. 3. 40	4. 51. 47	4. 58. 20
6	M.	10. 3. 17. 12	10. 9. 27. 36	5. 1. 18	5. 0. 39
7	Tu.	10. 15. 34. 59	10. 21. 39. 29	4. 56. 32	4. 49. 2
8	W.	10. 27. 41. 20	11. 3. 40. 46	4. 38. 23	4. 24. 38
9	Th.	11. 9. 38. 16	11. 15. 34. 10	4. 8. 7	3. 48. 57
10	F.	11. 21. 28. 59	11. 27. 23. 14	3. 27. 20	3. 3. 31
11	Sa.	0. 3. 17. 32	0. 9. 12. 24	2. 37. 45	2. 10. 9
12	Su.	0. 15. 8. 39	0. 21. 6. 53	1. 41. 5	1. 10. 43
13	M.	0. 27. 7. 49	1. 3. 12. 11	0. 39. 20 N	0. 7. 12 N
14	Tu.	1. 9. 20. 38	1. 15. 33. 47	0. 25. 19 S	0. 57. 59 S
15	W.	1. 21. 52. 19	1. 28. 16. 46	1. 30. 22	2. 2. 5
16	Th.	2. 4. 47. 34	2. 11. 25. 10	2. 32. 45	3. 1. 48
17	F.	2. 18. 9. 39	2. 25. 1. 14	3. 28. 52	3. 53. 17
18	Sa.	3. 1. 59. 43	3. 9. 4. 47	4. 14. 40	4. 32. 26
19	Su.	3. 16. 15. 53	3. 23. 32. 20	4. 46. 10	4. 55. 26
20	M.	4. 0. 53. 16	4. 8. 17. 40	4. 59. 55	4. 59. 23
21	Tu.	4. 15. 44. 25	4. 23. 12. 21	4. 53. 48	4. 43. 10
22	W.	5. 0. 40. 17	5. 8. 6. 54	4. 27. 41	4. 7. 40
23	Th.	5. 15. 31. 35	5. 22. 53. 8	3. 43. 31	3. 15. 47
24	F.	6. 0. 11. 4	6. 7. 24. 44	2. 45. 1	2. 11. 48
25	Sa.	6. 14. 33. 53	6. 21. 38. 15	1. 36. 53	1. 0. 48 S
26	Su.	6. 28. 37. 46	7. 5. 32. 38	0. 24. 10 S	0. 12. 24 N
27	M.	7. 12. 22. 49	7. 19. 8. 31	0. 48. 23 N	1. 23. 17
28	Tu.	7. 25. 50. 5	8. 2. 27. 42	1. 56. 41	2. 28. 6
29	W.	8. 9. 1. 36	8. 15. 32. 6	2. 57. 15	3. 23. 47
30	Th.	8. 21. 59. 26	8. 28. 23. 38	3. 47. 29	4. 8. 3
31	F.	9. 4. 45. 6	9. 11. 3. 52	4. 25. 24	4. 39. 19

[6] J A N U A R Y 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	28	21. 48	236. 59	243. 59	18. 0 S	18. 47 S
2	Th.	29	22. 41	250. 58	257. 57	19. 18	19. 34
3	F.	30	23. 33	264. 52	271. 44	19. 33	19. 17
4	Sa.	1	♂	278. 30	285. 10	18. 46	18. 1
5	Su.	2	0. 23	291. 42	298. 7	17. 3	15. 53
6	M.	3	1. 11	304. 24	310. 33	14. 33	13. 4
7	Tu.	4	1. 56	316. 33	322. 27	11. 27	9. 44
8	W.	5	2. 40	328. 15	333. 59	7. 56	6. 3
9	Th.	6	3. 22	339. 38	345. 14	4. 8	2. 11 S
10	F.	7	4. 4	350. 49	356. 23	0. 12 S	1. 46 N
11	Sa.	8	4. 44	1. 58	7. 35	3. 43 N	5. 38
12	Su.	9	5. 28	13. 17	19. 4	7. 31	9. 20
13	M.	10	6. 12	24. 56	30. 56	11. 4	12. 42
14	Tu.	11	6. 58	37. 5	43. 23	14. 13	15. 36
15	W.	12	7. 48	49. 51	56. 30	16. 48	17. 49
16	Th.	13	8. 40	63. 19	70. 19	18. 37	19. 11
17	F.	14	9. 35	77. 27	84. 44	19. 28	19. 29
18	Sa.	15	10. 32	92. 6	99. 34	19. 12	18. 37
19	Su.	16	11. 30	107. 3	114. 31	17. 44	16. 34
20	M.	17	12. 27	121. 59	129. 24	15. 6	13. 23
21	Tu.	18	13. 23	136. 44	143. 59	11. 27	9. 20
22	W.	19	14. 18	151. 9	158. 14	7. 4	4. 42 N
23	Th.	20	15. 12	165. 14	172. 10	2. 17 N	0. 10 S
24	F.	21	16. 4	179. 4	185. 56	2. 36 S	4. 58
25	Sa.	22	16. 57	192. 46	199. 36	7. 14	9. 23
26	Su.	23	17. 49	206. 27	213. 19	11. 23	13. 11
27	M.	24	18. 42	220. 11	227. 5	14. 48	16. 12
28	Tu.	25	19. 35	233. 59	240. 54	17. 21	18. 15
29	W.	26	20. 28	247. 48	254. 41	18. 54	19. 18
30	Th.	27	21. 20	261. 31	268. 18	19. 27	19. 19
31	F.	28	22. 11	275. 1	281. 38	18. 57	18. 22

J A N U A R Y 1772.

[7]

Days of the Month.	Days of the Week.	Semid. γ at Noon.	Semid. γ at Mid-night.	Hor. Par. γ at Noon.	Hor. Par. γ at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	W.	15. 44	15. 40	57. 43	57. 29	4940	4957
2	Th.	15. 36	15. 32	57. 15	56. 59	4975	4995
3	F.	15. 27	15. 23	56. 44	56. 29	5014	5033
4	Sa.	15. 19	15. 15	56. 13	55. 58	5054	5073
5	Su.	15. 11	15. 7	55. 44	55. 30	5091	5110
6	M.	15. 4	15. 0	55. 16	55. 3	5128	5145
7	Tu.	14. 57	14. 54	54. 52	54. 42	5159	5173
8	W.	14. 52	14. 50	54. 33	54. 26	5185	5194
9	Th.	14. 49	14. 48	54. 21	54. 18	5201	5205
10	F.	14. 48	14. 48	54. 18	54. 19	5205	5203
11	Sa.	14. 49	14. 51	54. 23	54. 29	5198	5190
12	Su.	14. 52	14. 56	54. 39	54. 50	5177	5162
13	M.	14. 59	15. 5	55. 4	55. 21	5144	5122
14	Tu.	15. 10	15. 16	55. 40	56. 1	5097	5069
15	W.	15. 22	15. 29	56. 23	56. 48	5041	5009
16	Th.	15. 36	15. 43	57. 14	57. 40	4976	4943
17	F.	15. 50	15. 57	58. 7	58. 33	4910	4877
18	Sa.	16. 4	16. 11	58. 58	59. 22	4846	4817
19	Su.	16. 17	16. 22	59. 44	60. 3	4790	4768
20	M.	16. 26	16. 29	60. 18	60. 30	4750	4735
21	Tu.	16. 32	16. 33	60. 39	60. 44	4724	4718
22	W.	16. 33	16. 32	60. 44	60. 41	4718	4722
23	Th.	16. 31	16. 28	60. 34	60. 24	4730	4742
24	F.	16. 24	16. 20	60. 12	59. 57	4757	4775
25	Sa.	16. 16	16. 11	59. 41	59. 23	4794	4816
26	Su.	16. 6	16. 0	59. 4	58. 41	4839	4864
27	M.	15. 55	15. 50	58. 25	58. 5	4887	4912
28	Tu.	15. 44	15. 39	57. 45	57. 26	4937	4961
29	W.	15. 34	15. 29	57. 8	56. 50	4984	5006
30	Th.	15. 24	15. 20	56. 33	56. 17	5028	5049
31	F.	15. 16	15. 12	56. 1	55. 46	5069	5089

[8] J A N U A R Y 1772.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	42. 0. 14	40. 28. 8	38. 56. 20	
6	α Pegasi.	47. 58. 4	46. 32. 13	45. 6. 49	43. 41. 56
7		36. 47. 6	35. 26. 25	34. 6. 39	32. 47. 50
8	α Arietis.	66. 22. 4	64. 53. 51	63. 25. 48	61. 57. 54
9		54. 40. 47	53. 13. 49	51. 46. 59	50. 20. 19
10		43. 9. 25	41. 43. 42	40. 18. 11	38. 52. 52
11		31. 49. 45			
11	Aldebaran.	63. 45. 39	62. 17. 1	60. 48. 17	59. 19. 30
12		51. 54. 0	50. 24. 33	48. 54. 58	47. 25. 13
13		39. 54. 1	38. 23. 12	36. 52. 10	35. 20. 56
14		27. 41. 17	26. 8. 37	24. 35. 44	23. 2. 39
15		15. 14. 13			
15	Pollux.	58. 40. 5	57. 6. 59	55. 33. 36	53. 59. 58
16		46. 8. 22	44. 33. 23	42. 58. 18	41. 23. 6
17		33. 26. 42			
17	Regulus.	68. 34. 54	66. 53. 9	65. 10. 59	63. 28. 24
18		54. 49. 44	53. 4. 53	51. 19. 42	49. 34. 10
19		40. 41. 55	38. 54. 38	37. 7. 9	35. 19. 30
20		26. 19. 26			
20	Spica α .	79. 38. 39	77. 48. 16	75. 57. 42	74. 6. 56
21		64. 50. 56	62. 59. 25	61. 7. 50	59. 16. 13
22		49. 57. 51	48. 6. 18	46. 14. 51	44. 23. 27
23		35. 8. 0	33. 17. 22	31. 26. 56	29. 36. 41
24		20. 28. 35			
24	Antares.	66. 16. 1	64. 28. 4	62. 40. 24	60. 53. 1
25		52. 0. 49	50. 15. 20	48. 30. 15	46. 45. 31
26		38. 7. 56	36. 25. 45	34. 44. 1	33. 2. 46
24	The Sun.			120. 34. 47	118. 54. 27
25		110. 36. 28	108. 57. 40	107. 19. 9	105. 40. 55
26		97. 34. 2	95. 57. 31	94. 21. 16	92. 45. 19
27		84. 49. 59	83. 15. 48	81. 41. 53	80. 8. 16
28		72. 24. 15	70. 52. 15	69. 20. 31	67. 49. 3
29		60. 15. 39	58. 45. 43	57. 16. 1	55. 46. 33
30		48. 22. 49	46. 54. 48	45. 27. 0	43. 59. 27

J A N U A R Y 1772

[9]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	α Pegasi.	42. 17. 37	40. 53. 54	39. 30. 54	38. 8. 38
7		31. 30. 1			
7	Arietis.	72. 16. 43	70. 47. 47	69. 19. 2	67. 50. 28
8		60. 30. 11	59. 2. 36	57. 35. 11	56. 7. 54
9		48. 53. 48	47. 27. 27	46. 1. 17	44. 35. 16
10		37. 27. 45	36. 2. 53	34. 38. 14	33. 13. 51
11	Aldebaran.	57. 50. 36	56. 21. 37	54. 52. 32	53. 23. 19
12		45. 55. 20	44. 25. 17	42. 55. 3	41. 24. 37
13		33. 49. 28	32. 17. 46	30. 45. 50	29. 13. 41
14		21. 29. 20	19. 55. 50	18. 22. 9	16. 48. 16
15	Pollux.	52. 26. 5	50. 51. 58	49. 17. 38	47. 43. 6
16		39. 47. 48	38. 12. 29	36. 37. 11	35. 1. 54
17	Regulus.	61. 45. 26	60. 2. 4	58. 18. 20	56. 34. 13
18		47. 48. 19	46. 2. 8	44. 15. 40	42. 28. 56
19		33. 31. 40	31. 43. 43	29. 55. 41	28. 7. 34
20	Spica μ	72. 16. 0	70. 24. 54	68. 33. 42	66. 42. 22
21		57. 24. 32	55. 32. 50	53. 41. 9	51. 49. 29
22		42. 32. 9	40. 40. 55	38. 49. 49	36. 58. 51
23		27. 46. 38	25. 55. 44	24. 7. 7	22. 17. 43
24	Antares.	59. 5. 57	57. 19. 11	55. 32. 45	53. 46. 37
25		45. 1. 10	43. 17. 13	41. 33. 41	39. 50. 36
26		31. 22. 1			
24	The Sun.	117. 14. 21	115. 34. 30	113. 54. 54	112. 15. 33
25		104. 2. 57	102. 25. 18	100. 47. 56	99. 10. 50
26		91. 9. 39	89. 34. 18	87. 59. 14	86. 24. 28
27		78. 34. 55	77. 1. 51	75. 29. 3	73. 56. 31
28		66. 17. 52	64. 46. 56	63. 16. 16	61. 45. 50
29		54. 17. 20	52. 48. 20	51. 19. 35	49. 51. 5
30		42. 32. 8	41. 5. 2	39. 38. 10	

[10]

JANUARY 1772.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Day	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica α	38. 18. 31	39. 58. 55	41. 39. 9	43. 19. 13
2		51. 36. 49	53. 15. 48	54. 54. 35	56. 33. 11
3		64. 43. 14			
8	The Sun.	40. 2. 11	41. 23. 39	42. 45. 3	44. 6. 22
9		50. 51. 47	52. 12. 37	53. 33. 26	54. 54. 10
10		61. 37. 24	62. 57. 59	64. 18. 33	65. 39. 9
11		72. 22. 33	73. 43. 21	75. 4. 14	76. 25. 11
12		83. 11. 33	84. 33. 11	85. 54. 59	87. 16. 56
13		94. 9. 23	95. 32. 29	96. 55. 49	98. 19. 23
14		105. 21. 5	106. 46. 14	108. 11. 41	109. 37. 26
15		116. 51. 6	118. 18. 50	119. 46. 56	121. 15. 23
13	Fomalhaut.	59. 16. 12	60. 35. 6	61. 54. 29	63. 14. 27
14		70. 1. 35	71. 24. 23	72. 47. 39	74. 11. 20
15		81. 16. 16			
15	α Pegasi.	63. 52. 44	65. 24. 5	66. 55. 54	68. 28. 9
16		76. 16. 14	77. 51. 11	79. 26. 35	81. 2. 25
17	α Arietis.	45. 32. 4	47. 11. 22	48. 51. 12	50. 31. 36
18		59. 1. 15	60. 44. 36	62. 28. 25	64. 12. 39
19	Aldebaran.	39. 29. 42	41. 17. 42	43. 6. 1	44. 54. 39
20		54. 2. 0	55. 52. 13	57. 42. 37	59. 33. 13
21		68. 48. 30	70. 39. 54	72. 31. 21	74. 22. 51
22		83. 40. 39			
22	Pollux.	42. 0. 58	43. 47. 36	45. 34. 29	47. 21. 34
23		56. 18. 47	58. 6. 16	59. 53. 42	61. 41. 4
24		70. 36. 14			
24	Regulus.	33. 39. 21	35. 27. 2	37. 14. 35	39. 1. 58
25		47. 56. 1	49. 42. 10	51. 28. 3	53. 13. 41
26		61. 57. 51	63. 41. 53	65. 25. 39	67. 9. 8
27		75. 42. 18			
27	Spica α	21. 53. 41	23. 35. 46	25. 17. 36	26. 59. 9
28		35. 23. 5	37. 3. 4	38. 42. 48	40. 22. 17
29		48. 35. 56	50. 13. 57	51. 51. 45	53. 29. 18
30		61. 33. 52	63. 10. 7	64. 46. 9	66. 22. 0
31		74. 18. 23			
31 F. 1	Antares.	29. 31. 57	31. 3. 42	32. 35. 27	34. 7. 13

JANUARY 1772.

[11]

Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica ♏	44. 59. 6	46. 38. 48	48. 18. 19	49. 57. 40
2		58. 11. 35	59. 40. 47	61. 27. 48	63. 5. 37
8	The Sun.	45. 27. 36	46. 48. 46	48. 9. 50	49. 30. 51
9		56. 14. 52	57. 35. 32	58. 56. 11	60. 16. 48
10		66. 59. 45	68. 20. 23	69. 41. 4	71. 1. 47
11		77. 46. 13	79. 7. 23	80. 28. 39	81. 50. 3
12		88. 39. 3	90. 1. 20	91. 23. 47	92. 46. 30
13		99. 43. 11	101. 7. 15	102. 31. 36	103. 56. 12
14		111. 3. 30	112. 29. 54	113. 56. 38	115. 23. 42
12	Fomalhaut.	54. 6. 21	55. 22. 55	56. 40. 7	57. 57. 52
13		64. 34. 55	65. 55. 52	67. 17. 18	68. 39. 12
14		75. 35. 29	77. 0. 3	78. 25. 2	79. 50. 26
15	♌ Pegasi.	70. 0. 52	71. 34. 2	73. 7. 39	74. 41. 43
16		82. 38. 41			
16	♈ Aries.	39. 0. 54	40. 37. 46	42. 15. 15	43. 53. 22
17		52. 12. 32	53. 53. 59	55. 35. 55	57. 18. 20
18		65. 57. 18			
18	Aldebaran.	32. 21. 17	34. 7. 50	35. 54. 4	37. 42. 3
19		46. 43. 35	48. 32. 48	50. 22. 17	52. 12. 1
20		61. 24. 0	63. 14. 56	65. 6. 0	66. 57. 11
21		76. 14. 25	78. 5. 59	79. 57. 34	81. 49. 7
22	Pollux.	49. 8. 50	50. 56. 13	52. 43. 42	54. 31. 14
23		63. 28. 21	65. 15. 32	67. 2. 35	68. 49. 30
24	Regulus.	40. 49. 10	42. 36. 12	44. 23. 1	46. 9. 37
25		54. 59. 4	56. 44. 10	58. 29. 1	60. 13. 33
26		68. 52. 21	70. 35. 16	72. 17. 53	74. 0. 14
27	Spica ♏	28. 40. 28	30. 21. 30	32. 2. 18	33. 42. 49
28		42. 1. 30	43. 40. 28	45. 19. 12	46. 57. 41
29		55. 6. 39	56. 43. 47	58. 20. 42	59. 57. 23
30		67. 57. 38	69. 33. 6	71. 8. 23	72. 43. 28
31	Antares.	35. 39. 2	37. 10. 50	38. 42. 40	40. 14. 29

[12]

JANUARY 1772.

JUPITER's Satellites will not be visible this Month,
JUPITER being too near the SUN.

F E B R U A R Y 1772. [13]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
1	Sa.		New Moon — 3. 4. 57
2	Su.	[of Vir. Mary.	First Quarter — 11. 10. 17
3	M.	4th Su. after Epiph. Pur.	Full Moon — 18. 9. 18
4	Tu.	Blas. On mor. of Purif.	Last Quarter — 25. 1. 20
5	W.	[3 ret.	
6	Th.	Agatha.	
7	F.		Other Phenomena.
8	Sa.		D.
9	Su.	5th Su. after Epiph. In 8	2. ☾ β 2 ^h . 10'.
10	M.	[days of Purif. 4 ret.	7. ☽ ☽ diff. Lat. 19'.
11	Tu.		☾ δ 22 ^h . 41'.
12	W.	Term ends.	8. ☾ ε Im. 6 ^h . 20'. Em.
13	Th.		7 ^h . 29'. * passes 4'. N.
14	F.	Valentine.	of ☽'s Center.
15	Sa.		11. ☽ ζ diff. Lat. 1°. 8'.
16	Su.	Septuagesima-Sunday.	12. ☾ ε 10 ^h . 15'.
17	M.		17. ☾ 2 ad α 2 ^h . 28'.
18	Tu.		☾ 2 Im. 4 ^h . 48 ¹ / ₂ '. Em.
19	W.		5 ^h . 41'. * passes 5'.
20	Th.		S. of ☽'s Center.
21	F.		☾ ο 19 ^h . 25'.
22	Sa.		18. ☾ π 3 ^h . 26'.
23	Su.	Sexagesima-Sunday.	☾ enters ☿ at 12 ^h .
24	M.	Sr. Matthias.	33'.
25	Tu.		21. ☾ α Im. 18 ^h . 12 ¹ / ₂ '.
26	W.		Em. 18 ^h . 52'. * passes
27	Th.		11 ¹ / ₂ '. S. of ☽'s Center.
28	F.		22. ☾ λ 17 ^h . 32'.
29	Sa.		23. ☾ α 5 ^h . 57'.
			☾ 4 ad ζ 23 ^h . 8'.
			29. ☾ β 8 ^h . 1'.
			☽ γ diff. Lat. 56'.

[14]

FEBRUARY 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.				Sun's Right Asc. in Time.			Sun's Declin. South.			Equat. of Time. Add.		Diff.
		S.	D.	M.	S.	H.	M.	S.	D.	M.	S.	M.	S.	
1	Sa.	10.	12.	17.	18	20.	59.	1,8	17.	7.	58	14.	2,7	7,5
2	Su.	10.	13.	18.	9	21.	3.	5,9	16.	50.	45	14.	10,2	6,8
3	M.	10.	14.	19.	0	21.	7.	9,2	16.	33.	15	14.	17,0	5,9
4	Tu.	10.	15.	19.	49	21.	11.	11,7	15.	15.	27	14.	22,9	5,2
5	W.	10.	16.	20.	37	21.	15.	13,5	15.	57.	22	14.	28,1	4,3
6	Th.	10.	17.	21.	24	21.	19.	14,3	15.	39.	1	14.	32,4	3,5
7	F.	10.	18.	22.	9	21.	23.	14,4	15.	20.	24	14.	35,9	2,7
8	Sa.	10.	19.	22.	52	21.	27.	13,6	15.	1.	32	14.	38,6	1,8
9	Su.	10.	20.	23.	34	21.	31.	12,1	14.	42.	24	14.	40,4	1,0
10	M.	10.	21.	24.	14	21.	35.	9,6	14.	23.	2	14.	41,4	0,2
11	Tu.	10.	22.	24.	52	21.	39.	6,3	14.	3.	26	14.	41,6	0,6
12	W.	10.	23.	25.	28	21.	43.	2,3	13.	43.	36	14.	41,0	1,4
13	Th.	10.	24.	26.	2	21.	46.	57,5	13.	23.	33	14.	39,6	2,2
14	F.	10.	25.	26.	35	21.	50.	51,9	13.	3.	17	14.	37,4	2,8
15	Sa.	10.	26.	27.	6	21.	54.	45,5	12.	42.	48	14.	34,6	3,6
16	Su.	10.	27.	27.	34	21.	58.	38,4	12.	22.	7	14.	31,0	4,5
17	M.	10.	28.	28.	1	22.	2.	30,5	12.	1.	14	14.	26,5	5,1
18	Tu.	10.	29.	28.	26	22.	6.	22,0	11.	40.	10	14.	21,4	5,8
19	W.	11.	0.	28.	50	22.	10.	12,7	11.	18.	55	14.	15,6	6,4
20	Th.	11.	1.	29.	12	22.	14.	2,9	10.	57.	30	14.	9,2	7,2
21	F.	11.	2.	29.	33	22.	17.	52,3	10.	35.	54	14.	2,0	7,7
22	Sa.	11.	3.	29.	52	22.	21.	41,1	10.	14.	8	13.	54,3	8,4
23	Su.	11.	4.	30.	9	22.	25.	29,2	9.	52.	14	13.	45,9	8,9
24	M.	11.	5.	30.	25	22.	29.	16,8	9.	30.	10	13.	37,0	9,6
25	Tu.	11.	6.	30.	40	22.	33.	3,8	9.	7.	57	13.	27,4	10,0
26	W.	11.	7.	30.	53	22.	36.	50,2	8.	45.	36	13.	17,4	10,7
27	Th.	11.	8.	31.	4	22.	40.	36,1	8.	23.	8	13.	6,7	11,2
28	F.	11.	9.	31.	14	22.	44.	21,4	8.	0.	32	12.	55,4	11,6
29	Sa.	11.	10.	31.	23	22.	48.	6,3	7.	37.	48	12.	43,8	12,1

F E B R U A R Y 1772. [15]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 16, 6	1. 8, 1	2. 32, 2	9. 993834	7. 3. 8
7	16. 15, 6	1. 7, 4	2. 31, 8	9. 994285	7. 2. 49
13	16. 14, 4	1. 6, 8	2. 31, 5	9. 994777	7. 2. 30
19	16. 13, 1	1. 6, 1	2. 31, 0	9. 995338	7. 2. 11
25	15. 11, 7	1. 5, 6	2. 30, 5	9. 995972	7. 1. 51

The Eclipses of JUPITER's Satellites will not be visible
this Month, JUPITER being too near the SUN.

[16] FEBRUARY 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Pass. over Merid
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 16^d.

1	5. 20. 17	5. 46 N	9. 23. 39	3. 0 N	18. 26 S	22. 39
7	6. 13. 16	3. 45	9. 24. 13	1. 53	19. 27	22. 18
13	7. 3. 0	1. 32 N	9. 28. 10	0. 44 N	19. 50	22. 13
19	7. 20. 44	0. 37 S	10. 4. 11	0. 17 S	19. 31	22. 16
25	8. 7. 27	2. 36	10. 11. 31	1. 6	18. 25	22. 25

V E N U S.

1	0. 10. 22	3. 3 S	11. 6. 28	1. 28 S	10. 31 S	1. 36
7	0. 19. 56	2. 46	11. 13. 55	1. 21	7. 34	1. 39
13	0. 29. 32	2. 24	11. 21. 21	1. 12	4. 32	1. 43
19	1. 9. 8	1. 59	11. 28. 44	1. 0	1. 26 S	1. 47
25	1. 18. 45	1. 29	0. 6. 6	0. 46	1. 43 N	1. 51

M A R S.

1	9. 11. 50	1. 30 S	9. 24. 13	0. 55 S	22. 12 S	22. 45
7	9. 15. 26	1. 34	9. 28. 50	0. 57	21. 20	22. 41
13	9. 19. 4	1. 38	10. 3. 29	0. 59	20. 21	22. 37
19	9. 22. 43	1. 41	10. 8. 9	1. 2	19. 14	22. 33
25	9. 26. 22	1. 44	10. 12. 50	1. 4	18. 1	22. 29

J U P I T E R.

1	10. 9. 59	0. 42 S	10. 10. 22	0. 35 S	18. 13 S	23. 51
7	10. 10. 30	0. 42	10. 11. 48	0. 35	17. 50	23. 33
13	10. 11. 2	0. 43	10. 13. 12	0. 36	17. 26	23. 15
19	10. 11. 33	0. 43	10. 14. 37	0. 36	17. 3	22. 58
25	10. 12. 5	0. 44	10. 15. 0	0. 37	16. 39	22. 40

S A T U R N. ♂ 14^d. 21^h.

1	4. 25. 50	1. 24 N	4. 27. 26	1. 35 N	13. 51 N	13. 0
7	4. 26. 2	1. 25	4. 26. 59	1. 35	14. 2	12. 34
13	4. 26. 16	1. 26	4. 26. 29	1. 36	14. 12	12. 8
19	4. 26. 29	1. 26	4. 25. 59	1. 36	14. 23	11. 43
25	4. 26. 41	1. 27	4. 25. 30	1. 37	14. 34	11. 18

FEBRUARY 1772.

[17]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sa.	9. 17. 20. 10	9. 23. 33. 57	4. 49. 43 N	4. 56. 34 N
2	Su.	9. 29. 45. 20	10. 5. 54. 24	4. 59. 45	4. 59. 38
3	M.	10. 12. 1. 11	10. 18. 5. 50	4. 55. 58	4. 48. 53
4	Tu.	10. 24. 8. 21	11. 0. 8. 57	4. 38. 38	4. 25. 16
5	W.	11. 6. 7. 40	11. 12. 4. 50	4. 9. 0	3. 50. 0
6	Th.	11. 18. 0. 35	11. 23. 55. 15	3. 28. 36	3. 5. 0
7	F.	11. 29. 49. 9	0. 5. 42. 47	2. 39. 25	2. 12. 3
8	Sa.	0. 11. 36. 29	0. 17. 30. 50	1. 43. 18	1. 13. 17
9	Su.	0. 23. 26. 26	0. 29. 23. 45	0. 42. 22 N	0. 10. 48 N
10	M.	1. 5. 23. 32	1. 11. 26. 26	0. 21. 7 S	0. 53. 7 S
11	Tu.	1. 17. 33. 2	1. 23. 44. 8	1. 24. 49	1. 55. 56
12	W.	2. 0. 0. 19	2. 6. 22. 10	2. 26. 3	2. 54. 51
13	Th.	2. 12. 50. 24	2. 19. 25. 24	3. 21. 52	3. 46. 41
14	F.	2. 26. 7. 38	3. 2. 57. 22	4. 8. 50	4. 27. 51
15	Sa.	3. 9. 54. 38	3. 16. 59. 25	4. 43. 19	4. 54. 42
16	Su.	3. 24. 11. 24	4. 1. 30. 7	5. 1. 39	5. 3. 49
17	M.	4. 8. 54. 45	4. 16. 24. 24	5. 0. 57	4. 52. 54
18	Tu.	4. 23. 57. 50	5. 1. 33. 51	4. 39. 41	4. 21. 24
19	W.	5. 9. 10. 57	5. 16. 47. 51	3. 58. 26	3. 31. 11
20	Th.	5. 24. 23. 15	6. 1. 55. 49	3. 0. 16	2. 26. 19
21	F.	6. 9. 24. 31	6. 16. 48. 27	1. 50. 4	1. 12. 15 S
22	Sa.	6. 24. 7. 2	7. 1. 19. 46	0. 33. 39 S	0. 4. 57 N
23	Su.	7. 8. 26. 19	7. 15. 26. 38	0. 43. 0 N	1. 19. 53
24	M.	7. 22. 20. 51	7. 29. 8. 59	1. 55. 4	2. 28. 6
25	Tu.	8. 5. 51. 26	8. 12. 28. 27	2. 58. 36	3. 26. 16
26	W.	8. 19. 0. 20	8. 25. 27. 36	3. 50. 51	4. 12. 11
27	Th.	9. 1. 50. 31	9. 8. 9. 30	4. 30. 9	4. 44. 36
28	F.	9. 14. 24. 58	9. 20. 37. 19	4. 55. 27	5. 2. 45
29	Sa.	9. 26. 46. 48	10. 2. 53. 35	5. 6. 26	5. 6. 35

[18] FEBRUARY 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	29	22. 58	288. 8	294. 33	17. 33 S	16. 32 S
2	Su.	30	23. 45	300. 50	307. 1	15. 20	13. 58
3	M.	1	0	313. 4	319. 2	12. 28	10. 50
4	Tu.	2	0. 29	324. 54	330. 40	9. 6	7. 17
5	W.	3	1. 12	336. 22	342. 1	5. 25	3. 30 S
6	Th.	4	1. 54	347. 37	353. 12	1. 33 S	0. 25 N
7	F.	5	2. 36	358. 46	4. 22	2. 22 N	4. 17
8	Sa.	6	3. 18	10. 0	15. 40	6. 11	8. 1
9	Su.	7	4. 2	21. 25	27. 16	9. 46	11. 26
10	M.	8	4. 47	33. 13	39. 17	13. 0	14. 26
11	Tu.	9	5. 34	45. 29	51. 51	15. 44	16. 51
12	W.	10	6. 24	58. 22	65. 2	17. 48	18. 32
13	Th.	11	7. 16	71. 51	78. 48	19. 2	19. 17
14	F.	12	8. 11	85. 54	93. 7	19. 16	18. 58
15	Sa.	13	9. 8	100. 25	107. 46	18. 22	17. 30
16	Su.	14	10. 5	115. 10	122. 35	16. 20	14. 54
17	M.	15	11. 3	130. 0	137. 22	13. 12	11. 17
18	Tu.	16	12. 0	144. 43	152. 1	9. 9	6. 51
19	W.	17	12. 56	159. 17	166. 29	4. 27 N	1. 59 N
20	Th.	18	13. 51	173. 40	180. 49	0. 31 S	3. 0 S
21	F.	19	14. 46	187. 55	195. 1	5. 25	7. 43
22	Sa.	20	15. 41	202. 7	209. 13	9. 53	11. 52
23	Su.	21	16. 36	216. 18	223. 23	13. 39	15. 13
24	M.	22	17. 31	230. 27	237. 29	16. 31	17. 35
25	Tu.	23	18. 25	244. 30	251. 28	18. 23	18. 55
26	W.	24	19. 17	258. 21	265. 10	19. 11	19. 11
27	Th.	25	20. 8	271. 56	278. 35	18. 57	18. 29
28	F.	26	20. 57	285. 6	291. 30	17. 47	16. 54
29	Sa.	27	21. 45	297. 48	303. 59	15. 49	14. 33

F E B R U A R Y 1772. [19]

Days of the Month.	Days of the Week.	Semidr. γ at Noon.	Semidr. γ at Mid-night.	Hor. Par. γ at Noon.	Hor. Par. γ at Midnight.	Proport. Lo- gar at Noon.	Proport. Lo- gar at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Sa.	15. 8	15. 5	55. 33	55. 20	5106	5123
2	Su.	15. 1	14. 58	55. 7	54. 56	5140	5154
3	M.	14. 55	14. 53	54. 46	54. 37	5167	5179
4	Tu.	14. 51	14. 49	54. 29	54. 21	5190	5201
5	W.	14. 47	14. 46	54. 16	54. 13	5207	5211
6	Th.	14. 45	14. 45	54. 9	54. 8	5217	5218
7	F.	14. 45	14. 46	54. 8	54. 11	5218	5214
8	Sa.	14. 47	14. 49	54. 15	54. 22	5209	5199
9	Su.	14. 51	14. 54	54. 31	54. 42	5187	5173
10	M.	14. 58	15. 3	54. 56	55. 12	5154	5133
11	Tu.	15. 7	15. 13	55. 30	55. 51	5110	5082
12	W.	15. 19	15. 26	56. 14	56. 39	5053	5021
13	Th.	15. 33	15. 41	57. 5	57. 33	4987	4952
14	F.	15. 49	15. 57	58. 2	58. 31	4916	4880
15	Sa.	16. 4	16. 12	58. 59	59. 27	4845	4811
16	Su.	16. 19	16. 26	59. 54	60. 18	4778	4750
17	M.	16. 31	16. 36	60. 39	60. 56	4724	4704
18	Tu.	16. 40	16. 42	61. 10	61. 19	4687	4677
19	W.	16. 43	16. 43	61. 22	61. 22	4673	4673
20	Th.	16. 42	16. 39	61. 16	61. 7	4680	4691
21	F.	16. 35	16. 30	60. 52	60. 35	4709	4729
22	Sa.	16. 25	16. 18	60. 14	59. 52	4754	4781
23	Su.	16. 12	16. 5	59. 27	59. 2	4811	4842
24	M.	15. 58	15. 51	58. 36	58. 11	4874	4905
25	Tu.	15. 44	15. 37	57. 45	57. 20	4937	4968
26	W.	15. 31	15. 25	56. 56	56. 34	4999	5027
27	Th.	15. 19	15. 14	56. 14	55. 54	5053	5079
28	F.	15. 9	15. 5	55. 36	55. 21	5102	5122
29	Sa.	15. 1	14. 57	55. 6	54. 53	5141	5158

[20] FEBRUARY 1772.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	α Arietis.	58. 7. 53	56. 40. 31	55. 13. 19	53. 46. 17
6		46. 33. 31	45. 7. 27	43. 41. 35	42. 15. 56
7		35. 11. 4	33. 46. 54	32. 23. 3	30. 59. 38
8		24. 10. 34			
8	Aldebaran.	55. 24. 11	53. 55. 35	52. 26. 54	50. 58. 7
9		43. 33. 1	42. 3. 45	40. 34. 20	39. 4. 50
10		31. 35. 6	30. 4. 41	28. 34. 5	27. 3. 20
11		19. 27. 3			
11	Pollux.	62. 55. 40	61. 25. 28	59. 55. 5	58. 24. 30
12		50. 48. 36	49. 16. 51	47. 44. 57	46. 12. 53
13		38. 30. 34			
13	Regulus.	73. 53. 19	72. 15. 37	70. 37. 30	68. 58. 59
14		60. 40. 5	58. 59. 2	57. 17. 32	55. 35. 38
15		46. 59. 48	45. 15. 23	43. 30. 35	41. 45. 24
16		32. 54. 10	31. 7. 2	29. 19. 38	27. 32. 6
17	Spica μ	71. 39. 15	69. 47. 42	67. 55. 51	66. 3. 44
18		56. 39. 23	54. 45. 53	52. 52. 14	50. 58. 28
19		41. 28. 16	39. 34. 6	37. 39. 58	35. 45. 52
20		26. 16. 27	24. 22. 58	22. 29. 40	20. 36. 36
21		11. 15. 24			
21	Antares.	57. 8. 20	55. 17. 57	53. 27. 55	51. 38. 15
22		42. 36. 6	40. 49. 3	39. 2. 33	37. 16. 37
23		28. 36. 25			
23	α Aquilæ.	81. 2. 23	79. 25. 57	77. 49. 57	75. 14. 27
24		68. 24. 42	66. 52. 29	65. 20. 51	63. 49. 52
25		56. 25. 6			
23	The Sun.	116. 3. 42	114. 25. 31	112. 47. 44	111. 10. 19
24		103. 9. 7	101. 34. 3	99. 59. 23	98. 25. 5
25		90. 39. 11	89. 7. 6	87. 35. 21	86. 3. 58
26		78. 32. 8	77. 2. 43	75. 33. 36	74. 4. 48
27		66. 45. 7	65. 18. 1	63. 51. 10	62. 24. 34
28		55. 15. 7	53. 49. 52	52. 24. 50	51. 0. 0
29		43. 58. 51	42. 35. 11	41. 11. 41	39. 48. 22

F E B R U A R Y 1772.

[21]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	α Arietis.	52. 19. 25	50. 52. 42	49. 26. 8	47. 59. 44
6		40. 50. 28	39. 25. 13	38. 0. 14	36. 35. 31
7		29. 36. 41	28. 14. 15	26. 52. 23	25. 31. 9
8	Aldebaran.	49. 29. 15	48. 0. 20	46. 31. 19	45. 2. 13
9		37. 35. 11	36. 5. 23	34. 35. 27	33. 5. 21
10		25. 32. 25	24. 1. 17	22. 30. 1	20. 58. 36
11	Pollux.	56. 53. 44	55. 22. 44	53. 51. 33	52. 20. 10
12		44. 40. 39	43. 8. 18	41. 35. 50	40. 3. 15
13	Regulus.	67. 20. 2	65. 40. 41	64. 0. 54	62. 20. 42
14		53. 53. 18	52. 10. 33	50. 27. 23	48. 43. 48
15		39. 59. 50	38. 13. 53	36. 27. 37	34. 41. 3
16		25. 44. 16			
16	Spica μ	79. 2. 5	77. 11. 55	75. 21. 22	73. 30. 29
17		64. 11. 19	62. 18. 39	60. 25. 47	58. 32. 41
18		49. 4. 33	47. 10. 33	45. 16. 33	43. 22. 25
19		33. 51. 47	31. 57. 46	30. 3. 53	28. 10. 6
20		18. 43. 46	16. 51. 12	14. 58. 56	13. 6. 59
21	Antares.	49. 48. 57	48. 0. 3	46. 11. 37	44. 23. 38
22		35. 31. 15	33. 46. 31	32. 2. 28	30. 19. 5
23	α Aquilæ.	74. 39. 25	73. 4. 54	71. 30. 57	69. 57. 32
24		62. 19. 32	60. 49. 52	59. 20. 53	57. 52. 37
22	The Sun.		121. 0. 32	119. 21. 12	117. 42. 16
23		109. 33. 18	107. 56. 41	106. 20. 26	104. 44. 35
24		96. 51. 10	95. 17. 40	93. 44. 27	92. 11. 38
25		84. 32. 55	83. 2. 11	81. 31. 49	80. 1. 48
26		72. 36. 17	71. 8. 4	69. 40. 8	68. 12. 29
27		60. 58. 13	59. 32. 6	58. 6. 13	56. 40. 33
28		49. 35. 23	48. 10. 58	46. 45. 44	45. 22. 42

[22] F E B R U A R Y 1772.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	41. 46. 15	43. 18. 0	44. 49. 37	46. 21. 9
7		41. 31. 10	42. 51. 30	44. 11. 52	45. 32. 15
8		52. 14. 48	53. 35. 30	54. 56. 17	56. 17. 9
9		63. 3. 0	64. 24. 30	65. 45. 8	67. 7. 55
10	The Sun.	73. 59. 19	75. 22. 10	76. 45. 13	78. 8. 29
11		85. 8. 15	86. 32. 59	87. 58. 1	89. 23. 20
12		96. 34. 29	98. 1. 41	99. 29. 15	100. 57. 10
13		108. 22. 24	109. 52. 37	111. 23. 14	112. 54. 16
14		120. 35. 42			
12	α Pegasi.	71. 45. 59	73. 17. 3	74. 48. 30	76. 20. 19
13		84. 5. 34			
13		40. 27. 52	42. 2. 25	43. 37. 33	45. 13. 17
14	α Arietis.	53. 20. 36	54. 59. 45	56. 39. 25	58. 19. 36
15		66. 48. 16			
15		33. 10. 27	34. 55. 19	36. 40. 38	38. 26. 26
16	Aldeba-	47. 22. 14	49. 10. 43	50. 59. 36	52. 48. 53
17	ran.	62. 0. 52	63. 52. 19	65. 44. 3	67. 36. 5
18		76. 59. 59	78. 53. 24	80. 46. 56	82. 40. 39
19		50. 9. 18	51. 59. 36	53. 50. 3	55. 40. 40
20	Pollux.	64. 54. 49	66. 45. 35	68. 36. 15	70. 26. 49
21		79. 37. 19			
21		42. 47. 30	44. 38. 25	46. 29. 5	48. 19. 29
22	Regulus.	57. 27. 12	59. 15. 48	61. 4. 2	62. 51. 55
23		71. 45. 46	73. 31. 22	75. 16. 36	77. 1. 25
24		85. 39. 46			
24		31. 54. 59	33. 37. 47	35. 20. 11	37. 2. 14
25		45. 26. 54	47. 6. 43	48. 46. 12	50. 25. 19
26	Spica π .	58. 35. 49	60. 12. 58	61. 49. 49	63. 26. 22
27		71. 24. 42	72. 59. 34	74. 34. 12	76. 8. 34
28		85. 56. 54			
28		38. 57. 10	40. 28. 14	41. 59. 13	43. 30. 7
29	Antares.	51. 3. 8	52. 33. 25	54. 3. 36	55. 33. 39
Mar		63. 2. 34			

F E B R U A R Y 1772. [23]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	47. 52. 36			
7		46. 52. 40	48. 13. 7	49. 33. 37	50. 54. 11
8		57. 38. 6	58. 59. 9	60. 20. 20	61. 41. 36
9		68. 29. 51	69. 51. 57	71. 14. 13	72. 36. 41
10	The Sun.	79. 31. 58	80. 55. 38	82. 19. 36	83. 43. 48
11		90. 48. 56	92. 14. 50	93. 41. 4	95. 7. 37
12		102. 25. 26	103. 54. 6	105. 23. 8	106. 52. 35
13		114. 25. 42	115. 57. 33	117. 29. 50	119. 2. 33
11	α Pegasi.	65. 45. 51	67. 15. 15	68. 45. 4	70. 15. 19
12		77. 52. 30	79. 25. 8	80. 58. 12	82. 31. 41
13	α Arietis.	46. 49. 37	48. 26. 31	50. 3. 59	51. 42. 1
14		60. 0. 19	61. 41. 33	63. 23. 17	65. 5. 31
15		40. 12. 42	41. 59. 25	43. 46. 35	45. 34. 11
16	Aldeba-	54. 38. 34	56. 28. 37	58. 19. 1	60. 9. 46
17	ran.	69. 28. 24	71. 20. 58	73. 13. 45	75. 6. 46
18		84. 34. 30			
18		42. 50. 59	44. 40. 4	46. 29. 31	48. 19. 16
19	Pollux.	57. 31. 26	59. 22. 16	61. 13. 6	63. 3. 58
20		72. 17. 17	74. 7. 36	75. 57. 45	77. 47. 40
21		50. 9. 36	51. 59. 28	53. 49. 1	55. 38. 16
22	Regulus.	64. 39. 27	66. 26. 36	68. 13. 22	69. 59. 45
23		78. 45. 52	80. 29. 55	82. 13. 36	83. 56. 52
24		38. 43. 54	40. 25. 12	42. 6. 8	43. 46. 42
25	Spica α	52. 4. 5	53. 42. 30	55. 20. 36	56. 58. 22
26		65. 2. 37	66. 38. 33	68. 14. 12	69. 49. 35
27		77. 42. 42	79. 16. 36	80. 50. 16	82. 23. 42
28	Antares.	45. 0. 55	46. 31. 38	48. 2. 14	49. 32. 44
29		57. 3. 35	58. 33. 28	60. 3. 15	61. 32. 57

[24] FEBRUARY 1772.

JUPITER'S Satellites will not be visible this Month,
being too near the SUN.

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
1	Su.	Quinquages. or Shrove Su.	D. H. M.
2	M.	Chad. [David.	New Moon — 3. 23. 16
3	Tu.		First Quarter — 12. 1. 54
4	W.	Ash-Wednesday.	Full Moon — 18. 19. 1
5	Th.	Prs. of Hesse born.	Last Quarter — 25. 14. 22
6	F.		
7	Sa.	Perpetua.	
8	Su.	1st Sunday in Lent.	Other Phenomena.
9	M.		D.
10	Tu.		1. δ ν δ diff. Lat. 29'.
11	W.		4. ϕ ζ κ diff. Lat. 8'.
12	Th.	Gregory M.	6. ϵ δ κ 5 ^h . 4'.
13	F.		ϵ κ 12 ^h . 3'.
14	Sa.		ϵ ϕ 22 ^h . 15'. diff. Lat. 1°. 9½'.
15	Su.	2d Sunday in Lent.	10. ϵ 1 ad δ δ 14 ^h . 9'.
16	M.		ϵ 2 ad δ δ 14 ^h . 42'.
17	Tu.		ϵ δ 17 ^h . 16'.
18	W.	Edw. K. of West-Sax.	15. ϵ 1 ad α ϕ 12 ^h . 23'.
19	Th.		ϵ 2 ad α ϕ 13 ^h . 15'.
20	F.		ϵ κ ϕ 17 ^h . 24'.
21	Sa.	Benedict.	16. ϵ ϕ Ω 6 ^h . 34'.
			ϵ π Ω 14 ^h . 42'.
22	Su.	3d Sunday in Lent.	19. $\odot$ enters γ at 13 ^h . 2'.
23	M.		20. ϵ α κ 4 ^h . 52'.
24	Tu.		21. ϵ λ κ 1 ^h . 58'.
25	W.	Annunciat. of the V. Mary.	ϵ ϕ Im. 14 ^h . 26½'.
26	Th.		Em. 15 ^h . 32'. *
27	F.		passes 6'. N. of δ 's
28	Sa.		Center.
29	Su.	4th Sunday in Lent, Mid-	26. ϵ 4 ad ζ ϕ 7 ^h . 56'.
30	M.	[lent-Sunday.	27. ϵ β ν 14 ^h . 2'.
31	Tu.		30. ϕ δ γ diff. Lat. 48'.

[26]		MARCH 1772.												
Days of the Month.	Days of the Week.	Sun's Longitude.				Sun's Right Asc. in Time.		Sun's Declin. South.		Equat. of Time. Add.		Diff.		
		S.	D.	M.	S.	H.	M.	S.	D.	M.	S.			
1	Su.	11.	11.	31.	30	22.	51.	50, 6	7.	14.	58	12.	31.	7
2	M.	11.	12.	31.	36	22.	55.	34, 5	6.	52.	2	12.	19.	0
3	Tu.	11.	13.	31.	40	22.	59.	17, 9	6.	29.	0	12.	5.	9
4	W.	11.	14.	31.	41	23.	3.	0, 8	6.	5.	53	11.	52.	4
5	Th.	11.	15.	31.	41	23.	6.	43, 3	5.	42.	41	11.	38.	3
6	F.	11.	16.	31.	38	23.	10.	25, 4	5.	19.	24	11.	23.	8
7	Sa.	11.	17.	31.	34	23.	14.	7, 0	4.	56.	3	11.	9.	9
8	Su.	11.	18.	31.	28	23.	17.	48, 3	4.	32.	38	10.	53.	7
9	M.	11.	19.	31.	19	23.	21.	29, 1	4.	9.	11	10.	38.	1
10	Tu.	11.	20.	31.	8	23.	25.	9, 7	3.	45.	40	10.	22.	1
11	W.	11.	21.	30.	54	23.	28.	49, 9	3.	22.	6	10.	5.	7
12	Th.	11.	22.	30.	39	23.	32.	29, 7	2.	58.	31	9.	49.	1
13	F.	11.	23.	30.	20	23.	36.	9, 3	2.	34.	54	9.	32.	2
14	Sa.	11.	24.	30.	0	23.	39.	48, 6	2.	11.	15	9.	14.	9
15	Su.	11.	25.	29.	37	23.	43.	27, 6	1.	47.	35	8.	57.	4
16	M.	11.	26.	29.	12	23.	47.	6, 4	1.	23.	54	8.	39.	7
17	Tu.	11.	27.	28.	45	23.	50.	45, 0	1.	0.	13	8.	21.	8
18	W.	11.	28.	28.	15	23.	54.	23, 4	0.	36.	32	8.	3.	7
19	Th.	11.	29.	27.	44	23.	58.	1, 6	0.	12.	51	7.	45.	4
20	F.	0.	0.	27.	10	0.	1.	39, 7	0.	10.	49	7.	27.	0
21	Sa.	0.	1.	26.	34	0.	5.	17, 6	0.	34.	28	7.	8.	5
22	Su.	0.	2.	25.	57	0.	8.	55, 6	0.	58.	6	6.	49.	9
23	M.	0.	3.	25.	18	0.	12.	33, 4	1.	21.	42	6.	31.	2
24	Tu.	0.	4.	24.	37	0.	16.	11, 1	1.	45.	17	6.	12.	5
25	W.	0.	5.	23.	54	0.	19.	49, 0	2.	8.	49	5.	53.	8
26	Th.	0.	6.	23.	10	0.	23.	26, 8	2.	32.	19	5.	35.	1
27	F.	0.	7.	22.	23	0.	27.	4, 6	2.	55.	46	5.	16.	4
28	Sa.	0.	8.	21.	35	0.	30.	42, 5	3.	19.	9	4.	57.	8
29	Su.	0.	9.	20.	46	0.	34.	20, 4	3.	42.	28	4.	39.	2
30	M.	0.	10.	19.	54	0.	37.	58, 4	4.	5.	44	4.	20.	7
31	Tu.	0.	11.	19.	1	0.	41.	36, 5	4.	28.	55	4.	2.	3

MARCH 1772.

[27]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 10. 5	1. 5. 3	2. 30. 1	9. 996533	7. 1. 36
7	16. 9. 0	1. 4. 8	2. 29. 7	9. 997226	7. 1. 16
13	16. 7. 4	1. 4. 5	2. 29. 2	9. 997921	7. 0. 57
19	16. 5. 7	1. 4. 4	2. 28. 7	9. 998651	7. 0. 38
25	16. 4. 1	1. 4. 3	2. 28. 3	9. 999412	7. 0. 19

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
D.	H. M. S.	D.	H. M. S.	D.	H. M. S.
2	12. 13. 28	2	3. 30. 46	3	5. 51. 12 I
4	6. 42. 24	5	16. 49. 54	3	9. 26. 26 E
6	1. 11. 20	9	6. 9. 6	10	9. 52. 55 I
7	19. 40. 19	12	19. 28. 24	10	13. 28. 17 E
9	14. 9. 16	16	8. 47. 48	17	13. 54. 56 I
11	8. 38. 14	19	22. 7. 14	17	17. 30. 24 E
13	3. 7. 12	23	11. 26. 42	24	17. 57. 4 I
14	21. 36. 13	27	0. 46. 12	24	21. 32. 37 E
16	16. 5. 14	30	14. 5. 39	31	21. 59. 7 I
18	10. 34. 15				
20	5. 3. 16				
21	23. 32. 16			IV. Satellite.	
23	18. 1. 16				
25	12. 30. 14			15	11. 19. 6 I
27	6. 59. 14			15	16. 4. 30 E
29	1. 28. 13				
30	19. 57. 12				

[28]

MARCH 1772.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Sup. δ 31^d. 20^h.

1	8. 21. 11	4. 4 S	10. 18. 21	1. 37 S	16. 53 S	22. 35
7	9. 8. 4	5. 32	10. 27. 17	2. 3	14. 21	22. 49
13	9. 26. 8	6. 35	11. 6. 56	2. 14	11. 3	23. 5
19	10. 16. 20	6. 59	11. 17. 20	2. 9	7. 0	23. 22
25	11. 9. 48	6. 23	11. 28. 30	1. 47	2. 14	23. 41

VENUS.

1	1. 26. 40	1. 2 S	0. 12. 13	0. 33 S	4. 20 N	1. 54
7	2. 6. 25	0. 29 S	0. 19. 31	0. 16 S	7. 25	1. 58
13	2. 16. 6	0. 5 N	0. 26. 47	0. 3 N	10. 23	2. 3
19	2. 25. 47	0. 39	1. 4. 0	0. 22	13. 13	2. 8
25	3. 5. 30	1. 13	1. 11. 11	0. 42	15. 52	2. 14

MARS.

1	9. 29. 27	1. 45 S	10. 16. 44	1. 6 S	16. 56 S	22. 26
7	10. 3. 10	1. 47	10. 21. 26	1. 8	15. 27	22. 22
13	10. 6. 54	1. 49	10. 26. 7	1. 9	13. 55	22. 18
19	10. 10. 39	1. 50	11. 0. 47	1. 10	12. 18	22. 14
25	10. 14. 26	1. 51	11. 5. 29	1. 11	10. 37	22. 11

JUPITER.

1	10. 12. 31	0. 44 S	10. 17. 9	0. 38 S	16. 19 S	22. 26
7	10. 13. 2	0. 45	10. 18. 30	0. 38	15. 55	22. 9
13	10. 13. 34	0. 45	10. 19. 50	0. 39	15. 30	21. 52
19	10. 14. 6	0. 46	10. 21. 7	0. 40	15. 6	21. 35
25	10. 14. 37	0. 47	10. 22. 22	0. 41	14. 43	21. 17

SATURN.

1	4. 25. 51	1. 29 N	4. 25. 7	1. 37 N	14. 41 N	10. 58
7	4. 27. 4	1. 27	4. 24. 40	1. 37	14. 31	10. 34
13	4. 27. 17	1. 28	4. 24. 16	1. 37	14. 59	10. 11
19	4. 27. 30	1. 28	4. 23. 54	1. 37	15. 6	9. 48
25	4. 27. 43	1. 29	4. 23. 34	1. 37	15. 12	9. 25

MARCH 1772.

[29]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Su.	10. 8. 58. 12	10. 15. 0. 50	5. 3. 15 N	4. 56. 34 N
2	M.	10. 21. 1. 42	10. 27. 0. 58	4. 46. 33	4. 33. 26
3	Tu.	11. 2. 58. 54	11. 8. 55. 33	4. 17. 21	3. 58. 28
4	W.	11. 14. 51. 21	11. 20. 46. 22	3. 37. 3	3. 13. 19
5	Th.	11. 26. 40. 40	0. 2. 34. 44	2. 47. 29	2. 19. 51
6	F.	0. 8. 28. 43	0. 14. 22. 48	1. 50. 41	1. 20. 15
7	Sa.	0. 20. 17. 34	0. 26. 13. 7	0. 48. 55 N	0. 16. 53 N
8	Su.	1. 2. 10. 9	1. 8. 8. 50	0. 15. 28 S	0. 47. 49 S
9	M.	1. 14. 9. 55	1. 20. 13. 38	1. 19. 55	1. 51. 22
10	Tu.	1. 26. 20. 49	2. 2. 31. 46	2. 21. 51	2. 51. 0
11	W.	2. 8. 47. 18	2. 15. 7. 42	3. 18. 28	3. 43. 51
12	Th.	2. 21. 33. 45	2. 28. 5. 45	4. 6. 51	4. 27. 1
13	F.	3. 4. 44. 17	3. 11. 29. 31	4. 43. 55	4. 57. 12
14	Sa.	3. 18. 21. 54	3. 25. 21. 21	5. 6. 31	5. 11. 27
15	Su.	4. 2. 27. 56	4. 9. 41. 17	5. 11. 44	5. 7. 6
16	M.	4. 17. 1. 13	4. 24. 26. 42	4. 57. 26	4. 42. 42
17	Tu.	5. 1. 57. 14	5. 9. 31. 34	4. 22. 56	3. 58. 21
18	W.	5. 17. 8. 39	5. 24. 47. 13	3. 29. 25	2. 56. 38
19	Th.	6. 2. 25. 27	6. 10. 2. 30	2. 20. 38	1. 42. 13
20	F.	6. 17. 36. 56	6. 25. 7. 37	1. 2. 9 S	0. 21. 17 S
21	Sa.	7. 2. 33. 32	7. 9. 53. 58	0. 19. 32 N	0. 59. 35 N
22	Su.	7. 17. 8. 12	7. 24. 15. 56	1. 38. 7	2. 14. 34
23	M.	8. 1. 16. 55	8. 8. 11. 9	2. 48. 24	3. 19. 13
24	Tu.	8. 14. 58. 38	8. 21. 39. 37	3. 46. 42	4. 10. 39
25	W.	8. 28. 14. 22	9. 4. 43. 18	4. 30. 55	4. 47. 23
26	Th.	9. 11. 6. 58	9. 17. 25. 34	5. 0. 0	5. 8. 49
27	F.	9. 23. 39. 50	9. 29. 49. 59	5. 13. 51	5. 15. 13
28	Sa.	10. 5. 56. 42	10. 12. 0. 24	5. 12. 57	5. 7. 12
29	Su.	10. 18. 1. 34	10. 24. 0. 33	4. 58. 7	4. 45. 47
30	M.	10. 29. 57. 54	11. 5. 53. 54	4. 30. 25	4. 12. 10
31	Tu.	11. 11. 48. 53	11. 17. 43. 18	3. 51. 17	3. 27. 59

[30] MARCH 1772.						
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.
			H. M.	D. M.	D. M.	D. M.
1	Su.	28	22. 29	310. 2	316. 0	13. 9 S
2	M.	29	23. 13	321. 53	327. 40	9. 58
3	Tu.	30	23. 56	333. 23	339. 2	6. 25
4	W.	1	0	344. 39	350. 15	2. 38 S
5	Th.	2	0. 38	355. 51	1. 26	1. 14 N
6	F.	3	1. 20	7. 4	12. 43	5. 3
7	Sa.	4	2. 3	18. 26	24. 12	8. 42
8	Su.	5	2. 48	30. 4	36. 2	12. 0
9	M.	6	3. 34	42. 7	48. 18	14. 50
10	Tu.	7	4. 22	54. 37	61. 3	17. 3
11	W.	8	5. 12	67. 36	74. 17	18. 31
12	Th.	9	6. 5	81. 5	87. 59	19. 5
13	F.	10	6. 59	94. 59	102. 3	18. 39
14	Sa.	11	7. 55	109. 10	116. 20	17. 9
15	Su.	12	8. 51	123. 32	130. 44	14. 34
16	M.	13	9. 47	137. 57	145. 10	11. 1
17	Tu.	14	10. 43	152. 23	159. 36	6. 42
18	W.	15	11. 39	166. 49	174. 3	1. 53 N
19	Th.	16	12. 36	181. 17	188. 33	3. 7 S
20	F.	17	13. 33	195. 51	203. 9	7. 52
21	Sa.	18	14. 30	210. 29	217. 49	12. 4
22	Su.	19	15. 27	225. 9	232. 28	15. 24
23	M.	20	16. 24	239. 45	246. 59	17. 41
24	Tu.	21	17. 18	254. 9	261. 12	18. 52
25	W.	22	18. 11	268. 8	274. 58	18. 56
26	Th.	23	19. 1	281. 39	288. 12	18. 1
27	F.	24	19. 49	294. 36	300. 52	16. 14
28	Sa.	25	20. 35	307. 0	313. 1	13. 45
29	Su.	26	21. 19	318. 56	324. 44	10. 43
30	M.	27	22. 2	330. 28	336. 8	7. 16
31	Tu.	28	22. 44	341. 46	347. 21	3. 35

MARCH 1772.

[31]

Days of the Month.	Days of the Week.	Semidr. D at Noon.	Semidr. D at Mid-night.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Propor. Lo- gr. at Noon.	Propor. Lo- gr. at Mida.
		M. S.	M. S.	M. S.	M. S.		
1	Sa.	14. 54	14. 52	54. 42	54. 32	5173	5186
2	M.	14. 49	14. 47	54. 24	54. 17	5197	5206
3	Tu.	14. 46	14. 45	54. 11	54. 7	5214	5219
4	W.	14. 44	14. 43	54. 4	54. 2	5223	5226
5	Th.	14. 43	14. 44	54. 2	54. 3	5226	5225
6	F.	14. 44	14. 45	54. 5	54. 9	5222	5217
7	Sa.	14. 47	14. 49	54. 14	54. 21	5218	5204
8	Su.	14. 51	14. 54	54. 30	54. 41	5189	5174
9	M.	14. 58	15. 2	54. 54	55. 9	5157	5137
10	Tu.	15. 6	15. 11	55. 26	55. 44	5115	5091
11	W.	15. 17	15. 23	56. 5	56. 28	5064	5035
12	Th.	15. 30	15. 37	56. 52	57. 18	5004	4971
13	F.	15. 44	15. 52	57. 45	58. 13	4937	4902
14	Sa.	16. 0	16. 7	58. 42	59. 10	4866	4832
15	Su.	16. 15	16. 22	59. 37	60. 3	4799	4768
16	M.	16. 28	16. 34	60. 27	60. 48	4739	4714
17	Tu.	16. 39	16. 43	61. 6	61. 20	4692	4676
18	W.	16. 45	16. 46	61. 29	61. 33	4665	4660
19	Th.	16. 46	16. 45	61. 32	61. 26	4661	4669
20	F.	16. 42	16. 37	61. 16	61. 0	4680	4699
21	Sa.	16. 32	16. 26	60. 41	60. 19	4722	4748
22	Su.	16. 19	16. 12	59. 54	59. 26	4778	4812
23	M.	16. 4	15. 56	58. 58	58. 29	4846	4882
24	Tu.	15. 48	15. 41	58. 0	57. 32	4918	4953
25	W.	15. 33	15. 26	57. 5	56. 39	4987	5021
26	Th.	15. 20	15. 13	56. 16	55. 52	5050	5081
27	F.	15. 8	15. 3	55. 32	55. 14	5107	5130
28	Sa.	14. 59	14. 55	54. 58	54. 44	5152	5170
29	Su.	14. 52	14. 49	54. 33	54. 23	5185	5198
30	M.	14. 47	14. 45	54. 16	54. 10	5207	5215
31	Tu.	14. 45	14. 44	54. 6	54. 4	5221	5223

[32]

MARCH 1772.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	Aldebaran.	58. 31. 2	57. 2. 24	55. 33. 44	54. 5. 0
7		46. 40. 39	45. 11. 40	43. 42. 57	42. 13. 30
8		34. 46. 37	33. 17. 0	31. 47. 18	30. 17. 30
9		22. 46. 44	21. 16. 17	19. 45. 46	18. 15. 12
10	Pollux.	54. 23. 35	52. 54. 2	51. 24. 24	49. 54. 41
11		42. 24. 46	40. 54. 41	39. 24. 38	37. 54. 37
12	Regulus.	65. 12. 52	63. 36. 3	61. 58. 52	60. 21. 20
13		52. 8. 9	50. 28. 25	48. 48. 18	47. 7. 49
14		38. 39. 42	36. 56. 59	35. 13. 57	33. 30. 36
15		24. 49. 38			
15	Spica κ	78. 4. 30	76. 17. 19	74. 29. 40	72. 41. 33
16		63. 34. 47	61. 44. 20	59. 53. 31	58. 2. 20
17		48. 41. 27	46. 48. 23	44. 55. 6	43. 1. 35
18		33. 31. 7	31. 36. 37	29. 42. 3	27. 47. 26
19	Antares.	18. 14. 14			
19		64. 4. 8	62. 10. 42	60. 17. 24	58. 24. 14
20		49. 1. 42	47. 10. 3	45. 18. 46	43. 27. 54
21		34. 20. 32	32. 32. 41	30. 45. 37	28. 59. 23
22	α Aquilæ.	20. 23. 36			
22		73. 2. 36	71. 25. 6	69. 48. 11	68. 11. 54
23		60. 20. 45	58. 48. 45	57. 17. 38	55. 47. 23
24	β Capricorni.	48. 30. 25			
24		45. 46. 1	44. 5. 12	42. 24. 49	40. 44. 52
25		32. 31. 17	30. 53. 45	29. 16. 36	27. 39. 49
23	The Sun.		120. 28. 54	118. 52. 30	117. 16. 31
24		109. 23. 21	107. 50. 0	106. 17. 4	104. 44. 33
25		97. 8. 12	95. 38. 6	94. 8. 22	92. 38. 59
26		85. 17. 16	83. 49. 57	82. 22. 55	80. 56. 12
27		73. 46. 44	72. 21. 40	70. 56. 49	69. 32. 13
28		62. 32. 19	61. 8. 56	59. 45. 43	58. 22. 40
29		51. 29. 32	50. 7. 19	48. 45. 12	47. 23. 11
30		40. 34. 28	39. 12. 58		

MARCH 1772.

[33]

Distances of J's Center from ☉, and from Stars east of her.

Days	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	Aldebaran.	64. 25. 36	62. 57. 0	61. 28. 23	59. 59. 43
6		52. 36. 14	51. 7. 25	49. 38. 32	48. 9. 37
7		40. 44. 19	39. 15. 1	37. 45. 38	36. 16. 11
8		28. 47. 35	27. 17. 31	25. 47. 22	24. 17. 6
9	Pollux.	16. 44. 33			
9		60. 20. 47	58. 51. 38	57. 22. 23	55. 53. 2
10		49. 24. 52	46. 54. 54	45. 24. 54	43. 54. 51
11	Regulus.	36. 24. 40			
11		71. 37. 1	70. 1. 27	68. 25. 34	66. 49. 24
12		58. 43. 27	57. 5. 11	55. 26. 32	53. 47. 32
13		45. 26. 58	43. 45. 41	42. 4. 3	40. 22. 3
14	Spica ♏	31. 46. 58	30. 3. 1	28. 18. 50	26. 34. 23
15		70. 53. 1	69. 4. 3	67. 14. 41	65. 24. 56
16		56. 10. 47	54. 18. 54	52. 26. 43	50. 34. 14
17		41. 7. 50	39. 13. 53	37. 19. 46	35. 25. 31
18	Antares.	25. 52. 46	23. 58. 6	22. 3. 26	20. 8. 49
19		56. 31. 15	54. 38. 27	52. 45. 56	50. 53. 44
20		41. 37. 26	39. 47. 23	37. 57. 53	36. 8. 54
21	α Aquilæ.	27. 14. 0	25. 29. 40	23. 46. 26	22. 4. 22
22		66. 36. 15	65. 1. 17	63. 27. 2	61. 53. 30
23	β Capricorni.	54. 18. 0	52. 49. 34	51. 22. 9	49. 55. 46
24		39. 5. 20	37. 26. 13	35. 47. 31	34. 9. 12
25	The Sun.	26. 3. 24			
23		115. 41. 0	114. 5. 56	112. 31. 18	110. 57. 6
24		103. 12. 28	101. 40. 48	100. 9. 33	98. 39. 42
25		91. 9. 58	89. 41. 17	88. 12. 57	86. 44. 56
26		79. 29. 47	78. 3. 37	76. 37. 43	75. 12. 5
27		68. 7. 50	66. 43. 39	65. 19. 39	63. 55. 54
28		56. 59. 46	55. 37. 0	54. 14. 22	52. 51. 53
29		46. 1. 18	44. 39. 29	43. 17. 44	41. 56. 4

[34]

MARCH 1772.

Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	63. 2. 34	64. 32. 5	66. 1. 31	67. 30. 51
2		74. 56. 19	76. 25. 11	77. 53. 58	79. 22. 42
8	The Sun.	43. 38. 45	45. 0. 48	46. 22. 58	47. 45. 17
9		54. 39. 16	56. 2. 38	57. 26. 10	58. 49. 53
10		65. 51. 1	67. 15. 56	68. 41. 6	70. 6. 30
11		77. 17. 42	78. 44. 45	80. 12. 6	81. 39. 46
12		89. 3. 17	90. 32. 59	92. 3. 4	93. 33. 30
13		101. 11. 37	102. 44. 25	104. 17. 38	105. 51. 16
14		113. 45. 52	115. 22. 4	116. 58. 40	118. 35. 44
12	Aldebaran.	14. 57. 55	16. 34. 8	18. 10. 53	19. 48. 7
13		28. 1. 35	29. 41. 35	31. 22. 3	33. 2. 58
14		41. 34. 21	43. 17. 56	45. 1. 59	46. 46. 27
15		55. 35. 43	57. 22. 52	59. 10. 26	60. 58. 26
16		70. 4. 46	71. 55. 11	73. 45. 57	75. 37. 4
17		84. 57. 42			
17	Pollux.	43. 14. 0	45. 2. 6	46. 50. 45	48. 39. 52
18		57. 51. 37	59. 42. 53	61. 34. 22	63. 26. 0
19	Regulus.	35. 51. 10	37. 44. 39	39. 38. 8	41. 31. 37
20		50. 57. 48	52. 50. 34	54. 43. 9	56. 35. 29
21		65. 53. 7	67. 43. 43	69. 33. 57	71. 23. 50
22		80. 27. 20			
22	Spica ♏	26. 42. 46	28. 30. 34	30. 17. 57	32. 4. 53
23		40. 53. 2	42. 37. 21	44. 21. 13	46. 4. 38
24		54. 35. 5	56. 15. 52	57. 56. 14	59. 36. 10
25		67. 49. 41	69. 27. 12	71. 4. 22	72. 41. 9
26		80. 39. 58			
26	Antares.	35. 46. 52	37. 19. 11	38. 51. 21	40. 23. 24
27		48. 1. 12	49. 32. 14	51. 3. 3	52. 33. 44
28		60. 4. 42	61. 34. 24	63. 3. 59	64. 33. 27
29		71. 58. 56			
29	3 Capricorni.	17. 6. 7	18. 35. 41	20. 5. 9	21. 34. 32
30		29. 0. 14	30. 29. 8	31. 58. 0	33. 26. 49
31		40. 50. 15	42. 18. 52	43. 47. 29	45. 16. 4
A.1		52. 39. 3			

MARCH 1772.

[35]

Distances of Moon's Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	69. 0. 6	78. 29. 16	71. 58. 22	73. 27. 22
2		80. 51. 20			
7	The Sun.		39. 33. 16	40. 55. 0	42. 16. 49
8		49. 7. 45	50. 30. 22	51. 53. 10	53. 16. 8
9		60. 13. 46	61. 37. 48	63. 1. 58	64. 26. 23
10		71. 32. 10	72. 58. 8	74. 24. 23	75. 50. 54
11		83. 7. 45	84. 36. 8	86. 4. 50	87. 33. 53
12		95. 4. 19	96. 35. 33	98. 7. 11	99. 39. 12
13		107. 25. 18	108. 59. 48	110. 34. 44	112. 10. 5
14		120. 13. 14			
12	Aldebaran.	21. 25. 52	23. 4. 6	24. 42. 48	26. 21. 58
13		34. 44. 19	36. 26. 9	38. 8. 27	39. 51. 10
14		48. 31. 23	50. 16. 48	52. 2. 40	53. 48. 58
15		62. 46. 51	64. 35. 44	66. 25. 1	68. 14. 42
16		77. 28. 31	79. 20. 20	81. 12. 27	83. 4. 55
17	Pollux.	50. 29. 29	52. 19. 31	54. 9. 53	56. 0. 36
18		65. 17. 48			
18	Regulus.	28. 18. 21	30. 11. 19	32. 4. 29	33. 57. 46
19		43. 25. 6	45. 18. 28	47. 11. 42	49. 4. 49
20		58. 27. 36	60. 19. 26	62. 10. 57	64. 2. 11
21		73. 13. 21	75. 2. 28	76. 51. 10	78. 39. 28
22	Spica ♏	33. 51. 23	35. 37. 27	37. 23. 5	39. 8. 17
23		47. 47. 37	49. 30. 8	51. 12. 13	52. 53. 52
24		61. 15. 41	62. 54. 47	64. 33. 29	66. 11. 47
25		74. 17. 35	75. 53. 40	77. 29. 26	79. 4. 52
26	Antares.	41. 55. 17	43. 27. 1	44. 58. 35	46. 29. 58
27		54. 4. 14	55. 34. 35	57. 4. 47	58. 34. 48
28		66. 2. 46	67. 31. 58	69. 1. 3	70. 30. 3
29	Capricorni.	23. 3. 50	24. 33. 3	26. 2. 11	27. 31. 15
30		34. 55. 34	36. 24. 17	37. 52. 58	39. 21. 37
31		46. 44. 39	48. 13. 15	49. 41. 51	51. 10. 27

Configurations of the SATELLITES of JUPITER
at half an Hour past 5 o' th' Clock in the Morning.

1		4.	⊙	1.	2.	3.
2	1.0	4.	⊙		2.	3.
3	4.		⊙	2.	1.	3.
4	1.		⊙	2.	3.	1.
5		4.	⊙	1.		2.
6	2.	4.	⊙	1.		
7		2.	⊙	4.	1.	2.
8			⊙	4.	2.	3.
9	1.0		⊙		2.	4.
10			⊙	2.	1.	3.
11			⊙	2.	3.	4.
12		3.	⊙	1.		4.
13		3.	⊙	2.	1.	4.
14		2.	⊙	1.	3.	4.
15	2.0		⊙	1.	3.	4.
16			⊙	4.	2.	3.
17		4.	⊙		3.	1.
18	3.	4.	⊙	1.		
19	4.	3.	⊙		2.	
20	4.	3.	⊙	1.	2.	
21		2.	⊙	1.	3.	
22		4.	⊙	2.	3.	
23			⊙		2.	3.
24	1.		⊙	2.		3.
25	1.0	3.	⊙		4.	
26		3.	⊙	1.	2.	4.
27		3.	⊙	1.	2.	4.
28		3.	⊙	2.	1.	4.
29			⊙	2.	3.	4.
30			⊙	1.	2.	3.
31	2.		⊙	1.	3.	4.

Days of the Month.		Sundays, Holidays, &c.	Phases of the Moon.
Days of the Week.			D. H.M.
1	W.	Richard, Bp. of Chich. S. Ambrose.	New Moon — 2. 17. 23
2	Th.		First Quarter — 10. 13. 17
3	F.		Full Moon — 17. 4. 3
4	Sa.		Last Quarter — 24. 5. 13
5	Su.	5th Sunday in Lent.	Other Phenomena. D. 4. ☿ ☿ ☿ diff. Lat. 10'. 6. ☾ 1 ad ☿ ☿ 20h. 10'. ☾ 2 ad ☿ ☿ 20h. 40'. ☾ ☿ ☿ 23h. 15'. 11. ☾ 1 ad ♀ ☿ 21h. 0'. ☾ 2 ad ♀ ☿ 21h. 55'. 12. ☾ ☿ ☿ 2h. 14'. 13. ☾ ☿ ☿ 0h. 17'. 16. ☾ ♀ ☿ 16h. 8'. 17. ☾ eclipsed invisible. ☾ ♀ ☿ 13h. 7'. 18. ☾ ♀ ☿ 2h. 16'. ☾ 4 ad ☿ ☿ 18h. 32'. ☿ ☿ ☿ diff. Lat. 16'. 19. ☉ enters ☿ at 1h. 54'. 23. ☾ ☿ ☿ 21h. 16'. 26. ☿ Stationary. 29. ☾ ☿ ☿ 17h. 50'. 30. ☾ ☿ ☿ 0h. 40'.
6	M.		
7	Tu.		
8	W.		
9	Th.		
10	F.	Cambridge Term ends.	
11	Sa.	Oxford Term ends.	
12	Su.	6th Sunday in Lent, Palm	
13	M.	[Sunday.	
14	Tu.		
15	W.		
16	Th.		
17	F.	Good Friday.	
18	Sa.		
19	Su.	Easter-Day, Alphege.	
20	M.	Easter-Monday.	
21	Tu.	Easter-Tuesday.	
22	W.		
23	Th.	St. George.	
24	F.		
25	Sa.	St. Mark.	
26	Su.	1st Sunday after Easter,	
27	M.	[Low Sunday.	
28	Tu.		
29	W.	Oxf. and Camb. Terms	
30	Th.	[begin.	

[38]

A P R I L 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	0. 12. 18. 6	0. 45. 14. 8	4. 52. 1	3. 44. 1	18, 1
2	Th.	0. 13. 17. 10	0. 48. 53. 2	5. 15. 3	3. 26. 0	18, 0
3	F.	0. 14. 16. 10	0. 52. 31. 7	5. 38. 0	3. 8. 0	17, 8
4	Sa.	0. 15. 15. 10	0. 56. 10. 4	6. 0. 49	2. 50. 2	17, 7
5	Su.	0. 16. 14. 7	0. 59. 49. 3	6. 23. 32	2. 32. 5	17, 4
6	M.	0. 17. 13. 1	1. 3. 28. 3	6. 46. 7	2. 15. 1	17, 3
7	Tu.	0. 18. 11. 54	1. 7. 7. 5	7. 8. 39	1. 57. 8	17, 0
8	W.	0. 19. 10. 43	1. 10. 47. 0	7. 31. 1	1. 40. 8	16, 9
9	Th.	0. 20. 9. 32	1. 14. 26. 7	7. 53. 16	1. 23. 9	16, 7
10	F.	0. 21. 8. 18	1. 18. 6. 5	8. 15. 23	1. 7. 2	16, 3
11	Sa.	0. 22. 7. 0	1. 21. 46. 7	8. 37. 21	0. 50. 9	16, 0
12	Su.	0. 23. 5. 40	1. 25. 27. 1	8. 59. 11	0. 34. 9	15, 7
13	M.	0. 24. 4. 19	1. 29. 7. 9	9. 20. 52	0. 19. 2	15, 4
14	Tu.	0. 25. 2. 56	1. 32. 49. 1	9. 42. 23	0. 3. 8	15, 1
15	W.	0. 26. 1. 30	1. 36. 30. 5	10. 3. 45	Sub. 11. 3	14, 8
16	Th.	0. 27. 0. 1	1. 40. 12. 2	10. 24. 57	0. 26. 1	14, 4
17	F.	0. 27. 58. 31	1. 43. 54. 3	10. 45. 58	0. 40. 5	13, 9
18	Sa.	0. 28. 57. 0	1. 47. 36. 9	11. 6. 49	0. 54. 4	13, 4
19	Su.	0. 29. 55. 26	1. 51. 19. 9	11. 27. 29	1. 7. 8	13, 3
20	M.	1. 0. 53. 50	1. 55. 3. 3	11. 47. 57	1. 21. 1	12, 6
21	Tu.	1. 1. 52. 13	1. 58. 47. 1	12. 8. 15	1. 33. 7	12, 3
22	W.	1. 2. 50. 35	2. 2. 31. 4	12. 28. 29	1. 46. 0	11, 7
23	Th.	1. 3. 48. 54	2. 6. 16. 2	12. 48. 14	1. 57. 7	11, 2
24	F.	1. 4. 47. 13	2. 10. 1. 5	13. 7. 55	2. 8. 9	10, 8
25	Sa.	1. 5. 45. 30	2. 13. 47. 3	13. 27. 23	2. 19. 7	10, 2
26	Su.	1. 6. 43. 45	2. 17. 33. 6	13. 46. 38	2. 29. 9	9, 8
27	M.	1. 7. 41. 59	2. 21. 20. 4	14. 5. 39	2. 39. 7	9, 1
28	Tu.	1. 8. 40. 11	2. 25. 7. 8	14. 24. 27	2. 48. 8	8, 5
29	W.	1. 9. 38. 24	2. 28. 55. 7	14. 43. 2	2. 57. 3	8, 1
30	Th.	1. 10. 36. 33	2. 32. 44. 2	15. 1. 21	3. 5. 4	7, 6

A P R I L 1772.

[39]

Days.	Semidia- meter of passing the Sun.	Time of D ^o Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 2,0	1. 4,4	2. 27,6	0.000311	6. 29. 57
7	16. 0,2	1. 4,5	2. 27,0	0.001050	6. 29. 38
13	15. 58,9	1. 4,8	2. 26,5	0.001763	6. 29. 19
19	15. 57,4	1. 5,1	2. 26,0	0.002470	6. 29. 0
25	15. 55,7	1. 5,5	2. 25,5	0.003172	6. 28. 41

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Immersions.		II. Satellite. Immersions.		III. Satellite.	
D	H. M. S.	D	H. M. S.	D	H. M. S.
1	14. 26. 6	3	3. 25. 17	1	1. 34. 43 E
3	8. 55. 5	6	16* 44. 41	8	2. 1. 0 I
5	3. 23. 59	10	6. 4. 9	8	5. 36. 37 E
6	21. 52. 57	13	19. 23. 30	15	6. 2. 41 I
8	16* 21. 50	17	8. 42. 50	15	9. 38. 20 E
10	10. 50. 44	20	22. 2. 6	22	10. 4. 0 I
12	5. 19. 38	24	11. 21. 9	22	13. 39. 40 E
13	23. 48. 27	28	0. 40. 13	29	14. 5. 0 I
15	18. 17. 17			29	17. 40. 36 E
17	12. 46. 9			IV. Satellite.	
19	7. 14. 54			1	5. 33. 48 I
21	1. 43. 42			1	10. 19. 42 E
22	20. 12. 27			17	23. 48. 22 I
24	14. 41. 9			18	4. 34. 22 E
26	9. 9. 48				
28	3. 38. 28				
29	22. 7. 3				

[40]

A P R I L 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Gr. Elong. 28^d.

1	0. 13. 2	3. 48 S	0. 12. 29	0. 57 S	4. 4 N	0. 2
7	1. 17. 13	0. 11 N	0. 24. 58	0. 3 N	9. 43	0. 25
13	2. 24. 46	4. 24	1. 7. 9	1. 9	15. 0	0. 48
19	4. 1. 7	6. 46	1. 17. 51	2. 5	19. 10	1. 8
25	5. 2. 31	6. 42	1. 26. 11	2. 37	21. 52	1. 19

V E N U S.

1	3. 16. 49	1. 48 N	1. 19. 29	1. 6 N	18. 40 N	2. 22
7	3. 26. 34	2. 16	1. 26. 32	1. 25	20. 47	2. 28
13	4. 6. 19	2. 40	2. 3. 32	1. 44	22. 35	2. 35
19	4. 16. 4	2. 58	2. 10. 27	2. 1	24. 1	2. 42
25	4. 25. 49	3. 12	2. 17. 17	2. 16	25. 7	2. 50

M A R S.

1	10. 18. 51	1. 51 S	11. 10. 56	1. 12 S	8. 35 S	22. 5
7	10. 22. 39	1. 51	11. 15. 36	1. 12	6. 47	22. 1
13	10. 26. 26	1. 50	11. 20. 17	1. 12	4. 58	21. 56
19	11. 0. 15	1. 48	11. 24. 55	1. 12	3. 7	21. 51
25	11. 4. 3	1. 46	11. 29. 34	1. 11	1. 16	21. 46

J U P I T E R.

1	10. 15. 14	0. 47 S	10. 23. 46	0. 42 S	14. 17 S	20. 58
7	10. 15. 46	0. 48	10. 24. 55	0. 43	13. 55	20. 40
13	10. 16. 18	0. 48	10. 26. 0	0. 44	13. 34	20. 22
19	10. 16. 49	0. 49	10. 27. 2	0. 46	13. 14	20. 5
25	10. 17. 21	0. 50	10. 28. 0	0. 47	12. 54	19. 45

S A T U R N.

1	4. 27. 58	1. 29 N	4. 23. 16	1. 37 N	15. 18 N	8. 58
7	4. 28. 11	1. 30	4. 23. 4	1. 36	15. 22	8. 34
13	4. 28. 23	1. 30	4. 22. 55	1. 36	15. 24	8. 12
19	4. 28. 36	1. 31	4. 22. 51	1. 35	15. 25	7. 50
25	4. 28. 49	1. 31	4. 22. 50	1. 35	15. 25	7. 28

A P R I L 1772.

[41]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	11. 23. 37. 23	11. 29. 31. 26	3. 2. 21 N	2. 34. 50 N
2	Th.	0. 5. 25. 44	0. 11. 20. 29	2. 5. 35	1. 34. 59
3	F.	0. 17. 15. 59	0. 23. 12. 34	1. 3. 14 N	0. 30. 41 N
4	Sa.	0. 29. 10. 21	1. 5. 9. 43	0. 2. 19 S	0. 35. 27 S
5	Su.	1. 11. 10. 51	1. 17. 14. 8	1. 8. 22	1. 40. 42
6	M.	1. 23. 19. 48	1. 29. 28. 15	2. 12. 8	2. 42. 18
7	Tu.	2. 5. 39. 49	2. 11. 54. 52	3. 10. 48	3. 37. 17
8	W.	2. 18. 13. 41	2. 24. 36. 43	4. 1. 25	4. 22. 50
9	Th.	3. 1. 4. 11	3. 7. 36. 38	4. 41. 11	4. 56. 9
10	F.	3. 14. 14. 15	3. 20. 57. 14	5. 7. 23	5. 14. 36
11	Sa.	3. 27. 45. 51	4. 4. 40. 16	5. 17. 32	5. 15. 57
12	Su.	4. 11. 40. 30	4. 18. 46. 26	5. 9. 40	4. 58. 39
13	M.	4. 25. 57. 51	5. 3. 14. 25	4. 42. 49	4. 22. 16
14	Tu.	5. 10. 35. 40	5. 18. 1. 1	3. 57. 12	3. 27. 55
15	W.	5. 25. 29. 30	6. 3. 0. 23	2. 54. 52	2. 18. 36
16	Th.	6. 10. 32. 29	6. 18. 4. 43	1. 39. 52	0. 59. 23 S
17	F.	6. 25. 36. 1	7. 3. 5. 15	0. 17. 52 S	0. 23. 43 N
18	Sa.	7. 10. 31. 12	7. 17. 53. 9	1. 4. 37 N	1. 44. 4
19	Su.	7. 25. 10. 12	8. 2. 21. 35	2. 21. 21	2. 55. 55
20	M.	8. 9. 26. 48	8. 16. 25. 32	3. 27. 17	3. 55. 1
21	Tu.	8. 23. 17. 43	9. 0. 3. 15	4. 18. 55	4. 38. 48
22	W.	9. 6. 42. 6	9. 13. 14. 40	4. 54. 35	5. 6. 15
23	Th.	9. 19. 41. 13	9. 26. 2. 10	5. 13. 48	5. 17. 27
24	F.	10. 2. 17. 54	10. 8. 29. 0	5. 17. 14	5. 13. 19
25	Sa.	10. 14. 36. 5	10. 20. 39. 31	5. 5. 52	4. 55. 4
26	Su.	10. 26. 40. 2	11. 2. 38. 9	4. 41. 7	4. 24. 11
27	M.	11. 8. 34. 19	11. 14. 29. 14	4. 4. 33	3. 42. 18
28	Tu.	11. 20. 23. 25	11. 26. 17. 15	3. 17. 45	2. 51. 11
29	W.	0. 2. 11. 10	0. 8. 5. 47	2. 22. 42	1. 52. 43
30	Th.	0. 14. 1. 15	0. 19. 58. 7	1. 21. 22	0. 49. 7

[42]

A P R I L 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	29	23. 27	352. 57	358. 32	0. 15 N	2. 11 N
2	Th.	1	0	4. 9	9. 48	4. 5	5. 57
3	F.	2	0. 9	15. 30	21. 17	7. 46	9. 30
4	Sa.	3	0. 54	27. 8	33. 5	11. 9	12. 42
5	Su.	4	1. 40	39. 7	45. 15	14. 7	15. 23
6	M.	5	2. 27	51. 30	57. 52	16. 30	17. 25
7	Tu.	6	3. 16	64. 20	70. 54	18. 9	18. 39
8	W.	7	4. 8	77. 34	84. 19	18. 56	18. 58
9	Th.	8	5. 1	91. 8	98. 0	18. 45	18. 18
10	F.	9	5. 54	104. 54	111. 49	17. 37	16. 39
11	Sa.	10	6. 48	118. 46	125. 43	15. 27	14. 0
12	Su.	11	7. 42	132. 41	139. 38	12. 20	10. 29
13	M.	12	8. 36	146. 36	153. 35	8. 27	6. 15
14	Tu.	13	9. 30	160. 36	167. 38	3. 57 N	1. 34 N
15	W.	14	10. 25	174. 42	181. 50	0. 53 S	3. 19 S
16	Th.	15	11. 22	189. 2	196. 17	5. 43	8. 1
17	F.	16	12. 19	203. 37	211. 1	10. 11	12. 11
18	Sa.	17	13. 17	218. 27	225. 56	13. 58	15. 30
19	Su.	18	14. 15	233. 25	240. 53	16. 47	17. 46
20	M.	19	15. 13	248. 20	255. 41	18. 28	18. 53
21	Tu.	20	16. 8	262. 56	270. 3	19. 0	18. 49
22	W.	21	17. 1	277. 2	283. 52	18. 23	17. 43
23	Th.	22	17. 50	290. 31	297. 1	16. 51	15. 46
24	F.	23	18. 38	303. 20	309. 31	14. 31	13. 7
25	Sa.	24	19. 23	315. 33	321. 28	11. 35	9. 57
26	Su.	25	20. 7	327. 18	333. 2	8. 14	6. 26
27	M.	26	20. 49	338. 41	344. 17	4. 35	2. 42 S
28	Tu.	27	21. 31	349. 53	355. 28	0. 47 S	1. 8 N
29	W.	28	22. 14	1. 3	6. 41	3. 3 N	4. 56
30	Th.	29	22. 56	12. 23	18. 7	6. 47	8. 34

A P R I L 1772.

[43]

Days of the Month.	Days of the Week.	Semid. ☽ at Noon.	Semid. ☽ at Mid-night.	Hor. Par. ☽ at Noon.	Hor. Par. ☽ at Midnight.	Proport. Lo-ear. at Noon.	Proport. Lo-ear. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	W.	14. 44	14. 44	54. 3	54. 4	5225	5223
2	Th.	14. 44	14. 45	54. 6	54. 9	5221	5217
3	F.	14. 46	14. 48	54. 13	54. 19	5211	5203
4	Sa.	14. 50	14. 52	54. 26	54. 35	5194	5182
5	Su.	14. 55	14. 58	54. 44	54. 55	5170	5155
6	M.	15. 1	15. 5	55. 8	55. 23	5138	5119
7	Tu.	15. 9	15. 13	55. 37	55. 53	5100	5080
8	W.	15. 18	15. 23	56. 11	56. 30	5056	5032
9	Th.	15. 29	15. 35	56. 50	57. 12	5006	4979
10	F.	15. 41	15. 48	57. 35	57. 59	4950	4919
11	Sa.	15. 55	16. 1	58. 23	58. 47	4890	4860
12	Su.	16. 8	16. 14	59. 12	59. 35	4830	4801
13	M.	16. 20	16. 26	59. 57	60. 18	4775	4750
14	Tu.	16. 31	16. 35	60. 36	60. 51	4728	4710
15	W.	16. 38	16. 40	61. 3	61. 10	4696	4687
16	Th.	16. 41	16. 41	61. 14	61. 13	4683	4684
17	F.	16. 39	16. 36	61. 7	60. 56	4691	4704
18	Sa.	16. 32	16. 26	60. 42	60. 23	4721	4743
19	Su.	16. 21	16. 15	60. 0	59. 37	4771	4799
20	M.	16. 7	16. 0	59. 10	58. 42	4832	4866
21	Tu.	15. 52	15. 44	58. 14	57. 45	4901	4937
22	W.	15. 37	15. 29	57. 17	56. 50	4972	5006
23	Th.	15. 22	15. 16	56. 24	56. 1	5040	5069
24	F.	15. 10	15. 4	55. 39	55. 19	5098	5124
25	Sa.	15. 0	14. 56	55. 3	54. 48	5145	5165
26	Su.	14. 53	14. 50	54. 36	54. 26	5181	5194
27	M.	14. 48	14. 47	54. 19	54. 14	5203	5210
28	Tu.	14. 46	14. 46	54. 11	54. 10	5214	5215
29	W.	14. 46	14. 47	54. 11	54. 14	5214	5210
30	Th.	14. 48	14. 50	54. 20	54. 25	5202	5195

Distances of ☽'s Center from ☉, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	Pollux.	69. 11. 45	67. 43. 3	66. 14. 16	64. 45. 25
6		57. 20. 12	55. 50. 57	54. 21. 40	52. 52. 20
7		45. 25. 15			
7	Regulus.	81. 2. 52	79. 29. 43	77. 56. 23	76. 22. 51
8		68. 32. 3	66. 57. 14	65. 22. 11	63. 46. 54
9		55. 46. 44	54. 9. 56	52. 32. 52	50. 55. 32
10		42. 44. 44	41. 5. 46	39. 26. 33	37. 47. 5
11		29. 26. 7			
11	Spica ♏	82. 45. 18	81. 2. 43	79. 19. 46	77. 36. 26
12		68. 54. 19	67. 8. 47	65. 22. 54	63. 36. 39
13		54. 40. 2	52. 51. 39	51. 2. 57	49. 13. 55
14		40. 4. 1	38. 13. 7	36. 21. 57	34. 30. 33
15		25. 10. 23			
15	Antares.	70. 56. 35	69. 5. 0	67. 13. 17	65. 21. 28
16		56. 1. 42	54. 9. 45	52. 17. 53	50. 26. 8
17		41. 9. 44	39. 19. 9	37. 28. 59	35. 39. 15
18		26. 38. 50			
18	♏ Aquilæ.	79. 3. 29	77. 22. 14	75. 41. 22	74. 0. 57
19		65. 46. 31	64. 9. 24	62. 33. 0	60. 57. 21
20		53. 11. 17			
20	♑ Capri- corni.	51. 17. 57	49. 32. 37	47. 47. 43	46. 3. 15
21		37. 27. 28	35. 45. 38	34. 4. 15	32. 23. 18
22		24. 5. 9			
22	♓ Pegasi.	72. 55. 43	71. 21. 32	69. 47. 51	68. 14. 37
23		60. 35. 42	59. 5. 21	57. 35. 30	56. 6. 10
24		48. 47. 18			
22	The Sun.	116. 2. 17	114. 31. 8	113. 0. 23	111. 30. 2
23		104. 4. 5	102. 35. 59	101. 8. 14	99. 40. 50
24		92. 28. 42	91. 3. 10	89. 37. 54	88. 12. 54
25		81. 11. 32	79. 47. 57	78. 24. 34	77. 1. 22
26		70. 7. 53	68. 45. 37	67. 23. 28	66. 1. 27
27		59. 12. 52	57. 51. 22	56. 29. 55	55. 8. 30
28		48. 21. 52	47. 0. 34	45. 39. 16	44. 17. 57

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	Pollux.	75. 5. 43	73. 37. 22	72. 8. 54	70. 40. 22
5		63. 16. 30	61. 47. 31	60. 18. 28	58. 49. 22
6		51. 22. 57	49. 53. 32	48. 24. 7	46. 54. 41
7	Regulus.	74. 49. 7	73. 15. 11	71. 41. 1	70. 6. 39
8		62. 11. 22	60. 35. 35	58. 59. 33	57. 23. 17
9		49. 17. 56	47. 40. 2	46. 1. 52	44. 23. 26
10		36. 7. 22	34. 27. 24	32. 47. 12	31. 6. 47
11	Spica μ	75. 52. 45	74. 8. 42	72. 24. 16	70. 39. 29
12		61. 50. 3	60. 3. 4	58. 15. 44	56. 28. 4
13		47. 24. 33	45. 34. 53	43. 44. 54	41. 54. 37
14		32. 38. 54	30. 47. 2	28. 55. 0	27. 2. 46
15	Antares.	63. 29. 35	61. 37. 38	59. 45. 40	57. 53. 42
16		48. 34. 28	45. 42. 56	44. 51. 38	43. 0. 34
17		33. 49. 56	32. 1. 12	30. 13. 4	28. 25. 36
18	α Aquilæ.	72. 20. 59	70. 41. 30	69. 2. 36	67. 24. 16
19		59. 22. 25	57. 48. 20	56. 15. 4	54. 42. 42
20	β Capri- corni.	44. 19. 13	42. 35. 37	40. 52. 28	39. 9. 45
21		30. 42. 47	29. 2. 43	27. 23. 5	25. 43. 54
22	α Pegasi.	66. 41. 53	65. 9. 37	63. 37. 49	62. 6. 31
23		54. 37. 20	53. 9. 1	51. 41. 14	50. 14. 0
21	The Sun.		120. 38. 12	119. 5. 48	117. 33. 50
22		110. 0. 5	108. 30. 31	107. 1. 20	105. 32. 32
23		98. 13. 46	96. 47. 2	95. 20. 37	93. 54. 31
24		86. 48. 9	85. 23. 39	83. 59. 23	82. 35. 21
25		75. 38. 22	74. 15. 31	72. 52. 50	71. 30. 17
26		64. 39. 32	63. 17. 45	61. 56. 2	60. 34. 25
27		53. 47. 8	52. 25. 47	51. 4. 28	49. 43. 10
28		42. 56. 38	41. 35. 18	40. 13. 55	38. 52. 32

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	The Sun.			38. 59. 50	40. 24. 52
7		47. 32. 45	48. 58. 55	50. 25. 18	51. 51. 53
8		59. 8. 2	60. 35. 58	62. 4. 9	63. 32. 36
9		70. 58. 37	72. 28. 41	73. 59. 4	75. 29. 44
10		83. 7. 38	84. 40. 10	86. 13. 2	87. 46. 14
11		95. 37. 25	97. 12. 43	98. 48. 24	100. 24. 26
12		108. 30. 9	110. 8. 24	111. 47. 1	113. 26. 0
11	Aldebaran.	50. 54. 57	52. 37. 27	54. 20. 19	56. 3. 32
12		64. 45. 17	66. 30. 45	68. 16. 34	70. 2. 45
13		78. 59. 7	80. 47. 27	82. 36. 6	84. 25. 7
14	Pollux.	51. 31. 55	53. 19. 3	55. 6. 36	56. 54. 34
15		65. 59. 35	67. 49. 27	69. 39. 32	71. 29. 52
16	Regulus.	43. 55. 0	45. 47. 35	47. 40. 12	49. 32. 52
17		58. 56. 2	60. 48. 28	62. 40. 45	64. 32. 53
18		73. 50. 37	75. 41. 28	77. 32. 2	79. 22. 19
19	Spica μ	34. 45. 58	36. 34. 34	38. 22. 46	40. 10. 36
20		49. 3. 29	50. 48. 46	52. 33. 38	54. 18. 4
21		62. 53. 47	64. 35. 36	66. 16. 59	67. 57. 56
22		76. 16. 6			
22	Antares.	31. 31. 26	33. 6. 43	34. 41. 48	36. 16. 41
23		44. 8. 8	45. 41. 43	47. 15. 3	48. 48. 9
24		56. 29. 46	58. 1. 21	59. 32. 42	61. 3. 50
25		68. 36. 21	70. 6. 14	71. 35. 57	73. 5. 30
26		80. 30. 55			
26	β Capricorni.	25. 42. 36	27. 12. 6	28. 41. 28	30. 10. 44
27		37. 35. 32	39. 4. 17	40. 33. 0	42. 1. 39
28		49. 24. 35			
28	α Aquilæ.	55. 30. 54	56. 48. 7	58. 5. 41	59. 23. 33
29		65. 57. 29	67. 17. 5	68. 36. 55	69. 56. 59
30		76. 40. 24	78. 1. 40	79. 23. 5	80. 44. 42
M.J		87. 34. 58			

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	The Sun.	41. 50. 5	43. 15. 28	44. 41. 2	46. 6. 48
7		53. 18. 41	54. 45. 41	56. 12. 55	57. 40. 21
8		65. 1. 15	66. 30. 10	67. 59. 22	69. 28. 51
9		77. 0. 42	78. 31. 58	80. 3. 32	81. 35. 26
10		89. 19. 46	90. 53. 39	92. 27. 53	94. 2. 29
11		102. 0. 50	103. 37. 37	105. 14. 45	106. 52. 16
12		115. 5. 21	116. 45. 3	118. 25. 8	120. 5. 33
10	Aldeba- ran.	44. 8. 38	45. 49. 40	47. 31. 3	49. 12. 49
11		57. 47. 8	59. 31. 6	61. 15. 28	63. 0. 11
12		71. 49. 18	73. 36. 14	75. 23. 30	77. 11. 8
13		86. 14. 28			
13	Pollux.	44. 28. 30	46. 13. 32	47. 59. 7	49. 45. 16
14		58. 42. 57	60. 31. 39	62. 20. 40	64. 9. 58
15		73. 20. 21			
15	Regulus.	36. 25. 54	38. 17. 57	40. 10. 10	42. 2. 31
16		51. 25. 34	53. 18. 16	55. 10. 55	57. 3. 29
17		66. 24. 52	68. 16. 38	70. 8. 11	71. 59. 31
18		81. 12. 19			
18	Spica μ	27. 28. 1	29. 18. 0	31. 7. 40	32. 57. 0
19		41. 58. 1	43. 45. 0	45. 31. 35	47. 17. 44
20		56. 2. 6	57. 45. 41	59. 28. 49	61. 11. 31
21		69. 38. 26	71. 18. 31	72. 58. 9	74. 37. 21
22	Antares.	37. 51. 23	39. 25. 54	41. 0. 12	42. 34. 16
23		50. 20. 59	51. 53. 34	53. 25. 52	54. 57. 56
24		62. 34. 45	64. 5. 27	65. 35. 57	67. 6. 15
25		74. 34. 52	76. 4. 5	77. 33. 10	79. 2. 6
26	Capri- corni.	31. 39. 52	33. 8. 54	34. 37. 51	36. 6. 44
27		43. 30. 16	44. 58. 51	46. 27. 26	47. 56. 1
28	Aquilæ.	60. 41. 45	62. 0. 16	63. 19. 4	64. 38. 8
29		71. 17. 17	72. 37. 46	73. 58. 27	75. 19. 20
30		82. 6. 27	83. 28. 22	84. 50. 26	86. 12. 38

[48]

A P R I L 1772.

Configurations of the SATELLITES of J U P I T E R
at $\frac{1}{2}$ an Hour past 4 o' th' Clock in the Morning.

1			.2	.1	⊙		3.	4.
2	1● 4●			3.	⊙	.2		
3			3.	4.	⊙	.1	2.	
4		4.	.3	2.	1.	⊙		
5	4.		.2	.3	⊙	.1		
6	4.		.1		⊙	.2	.3	
7	4.				⊙	2.	1.	3.
8		4.	2.	.1	⊙		3.	
9	2.0		4.	3.	⊙	1.		
10	1.0		3.	4.	⊙		2.	
11			.3	2.	1.	⊙	.4	
12			.2	.3	⊙	.1		.4
13			1.		⊙	.2	.3	.4
14					⊙	2.	1.	.3
15			2.	.1	⊙		3.	4.
16	2.0			3.	⊙	1.		4.
17			3.		.1	⊙	2.	4.
18			.3	2.	1.	⊙		4.
19	4●		.2	.3	⊙	.1		
20			4.	1.	⊙	.2	.3	
21		4.			⊙	1	2	.3
22	4.		2.	.1	⊙		3.	
23	4.			.2	⊙	1.		3●
24	4.		3.	.1	⊙		2.	
25	1●	4.	.3		⊙			2●
26		.4	2	3	⊙	.1		
27			1.	.4	⊙	3	2	
28					⊙	4	1	.3
29			2.	1.	⊙		3.	.4
30			.2		⊙	3.	1.	.4

M A Y 1772.			[49]
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
1	F.	<i>S. Philip and S. James.</i>	D. H. M.
2	Sa.		New Moon — 2. 9. 44
3	Su.	<i>2d. Su. aft. East. Inv. of +</i> <i>From East. in 15 d. 1 ret.</i>	First Quarter — 9. 21. 1
4	M.		Full Moon — 16. 12. 50
5	Tu.	John Evan. ante P. L. [Term begins.	Last Quarter — 23. 21. 29
6	W.		New Moon — 31. 23. 24
7	Th.		Other Phenomena. D.
8	F.		
9	Sa.		
10	Su.	4. ☾ 1 ad ♄ 8 ^h . 3'.	
11	M.	<i>3d Sunday after Easter.</i> <i>From Easter in 3 weeks,</i> [2 ret.	☾ 2 ad ♄ 8 ^h . 33'.
12	Tu.		☾ 8 ^h . 6'.
13	W.		9. ☾ 1 ad ♄ 3 ^h . 17'.
14	Th.		☾ 2 ad ♄ 4 ^h . 13'.
15	F.		☾ ♄ Im. 8 ^h . 56'. *
16	Sa.		15'. N. of ♄'s cent.
			Em. 9 ^h . 12 ^h . 15 ^h . * 15 ^h . N.
17	Su.	<i>4th Sunday after Easter.</i> <i>From East. in 1 m. 3 ret.</i>	♄ Stationary.
18	M.		10. ☾ π 7 ^h . 17'.
19	Tu.	<i>2. Charlotte born 1744.</i> [Dunstan.	12. ☾ ♄ II diff. lat. 41'.
20	W.		14. ☾ ♄ 1 ^h . 56'.
21	Th.		☾ λ 23 ^h . 20'.
22	F.		15. ☾ ♄ Im. 12 ^h . 11'. *
23	Sa.		6'. N. of ♄'s cent.
			Em. 13 ^h . 10'. * 5'. N.
			16. ☾ 4 ad ζ 5 ^h . 1'.
24	Su.	<i>5th Su. aft. East. Rog. Su.</i> <i>From East. in 5 w. 4 ret.</i>	☾ θ 13 ^h . 2'.
25	M.		17. ♂ ζ ♄ diff. lat. 54'.
26	Tu.	August. 1st Abp. of Cant. Venerable Bede.	20. ☉ enters II at 2 ^h . 34'.
27	W.		21. ☾ β 5 ^h . 47'.
28	Th.	<i>Ascension day, Holy Th.</i>	25. ♄ x II diff. lat. 21'.
29	F.	<i>K. Charles II. restored.</i> [On mor. of asc. 5 ret.	26. ☾ ♄ 1 ^h . 4'.
30	Sa.		☾ ♄ 7 ^h . 55'.
31	Su.	<i>Sun after Ascension-day.</i>	28. ☾ ♂ 4 ^h . 57'.

[50]

M A Y 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.				Sun's Right Asc. in Time.			Sun's Declin. North.			Equat. of Time. Sub.		Diff.
		S.	D.	M.	S.	H.	M.	S.	D.	M.	S.	M.	S.	
1	F.	1.	11.	34.	41	2.	36.	33, 1	15.	19.	25	3.	13, 1	7,0 6,4 5,9 5,3 4,8
2	Sa.	1.	12.	32.	47	2.	40.	22, 6	15.	37.	15	3.	20, 1	
3	Su.	1.	13.	30.	52	2.	44.	12, 7	15.	54.	48	3.	26, 5	
4	M.	1.	14.	28.	55	2.	48.	3, 4	16.	12.	7	3.	32, 4	
5	Tu.	1.	15.	26.	57	2.	51.	54, 6	16.	29.	9	3.	37, 7	
6	W.	1.	16.	24.	56	2.	55.	46, 4	16.	45.	55	3.	42, 5	4,2 3,7 3,1 2,6 2,0
7	Th.	1.	17.	22.	54	2.	59.	38, 7	17.	2.	24	3.	46, 7	
8	F.	1.	18.	20.	50	3.	3.	31, 6	17.	18.	36	3.	50, 4	
9	Sa.	1.	19.	18.	45	3.	7.	25, 1	17.	34.	31	3.	53, 5	
10	Su.	1.	20.	16.	37	3.	11.	19, 0	17.	50.	7	3.	56, 1	
11	M.	1.	21.	14.	27	3.	15.	13, 5	18.	5.	26	3.	58, 1	1,4 0,9 0,4 0,2 0,8
12	Tu.	1.	22.	12.	16	3.	19.	8, 6	18.	20.	27	3.	59, 5	
13	W.	1.	23.	10.	3	3.	23.	4, 2	18.	35.	10	4.	0, 4	
14	Th.	1.	24.	7.	48	3.	27.	0, 4	18.	49.	33	4.	0, 8	
15	F.	1.	25.	5.	32	3.	30.	57, 2	19.	3.	38	4.	0, 6	
16	Sa.	1.	26.	3.	14	3.	34.	54, 6	19.	17.	23	3.	59, 8	1,4 1,9 2,4 3,0 3,6
17	Su.	1.	27.	0.	55	3.	38.	52, 5	19.	30.	49	3.	58, 4	
18	M.	1.	27.	58.	34	3.	42.	50, 9	19.	43.	54	3.	56, 5	
19	Tu.	1.	28.	56.	12	3.	46.	49, 9	19.	56.	40	3.	54, 1	
20	W.	1.	29.	53.	50	3.	50.	49, 5	20.	9.	6	3.	51, 1	
21	Th.	2.	0.	51.	26	3.	54.	49, 7	20.	21.	11	3.	47, 5	4,2 4,6 5,2 5,8 6,2
22	F.	2.	1.	49.	1	3.	58.	50, 4	20.	32.	56	3.	43, 3	
23	Sa.	2.	2.	46.	36	4.	2.	51, 6	20.	44.	19	3.	38, 7	
24	Su.	2.	3.	44.	9	4.	6.	53, 3	20.	55.	21	3.	33, 5	
25	M.	2.	4.	41.	42	4.	10.	55, 7	21.	6.	2	3.	27, 7	
26	Tu.	2.	5.	39.	14	4.	14.	58, 5	21.	16.	21	3.	21, 5	6,8 7,2 7,8 8,2 8,5
27	W.	2.	6.	36.	46	4.	19.	1, 8	21.	26.	18	3.	14, 7	
28	Th.	2.	7.	34.	17	4.	23.	5, 7	21.	35.	53	3.	7, 5	
29	F.	2.	8.	31.	47	4.	27.	10, 0	21.	45.	5	2.	59, 7	
30	Sa.	2.	9.	29.	16	4.	31.	14, 7	21.	53.	55	2.	51, 5	
31	Su.	2.	10.	26.	44	4.	35.	19, 9	22.	2.	23	2.	43, 0	9,0

M A Y 1772.

[51]

Days.	Semidia- meter of the Sun.	Time of De- passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 54. 3	1. 6. 0	2. 25. 2	0. 003837	6. 28. 22
7	15. 53. 0	1. 6. 4	2. 24. 8	0. 004435	6. 28. 3
13	15. 52. 0	1. 7. 0	2. 24. 6	0. 004975	6. 27. 44
19	15. 50. 7	1. 7. 4	2. 24. 1	0. 005479	6. 27. 25
25	15. 49. 6	1. 7. 9	2. 23. 8	0. 005946	6. 27. 6

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	16. 35. 41	1	13. 59. 15	6	18. 5. 22 I
3	11. 4. 12	5	3. 18. 3	6	21. 40. 56 E
5	5. 32. 46	8	16. 36. 50	13	22. 5. 22 I
7	0. 1. 14	12	5. 55. 36	14	1. 40. 54 E
8	18. 29. 39	15	19. 14. 6	21	2. 4. 54 I
10	12. 58. 9	19	8. 32. 26	21	5. 40. 23 E
12	7. 26. 33	22	21. 50. 46	28	6. 4. 4 I
14	1. 54. 56	26	11. 9. 2	28	9. 39. 25 E
15	20. 23. 17	30	0. 27. 6		
17	14. 51. 37				
19	9. 19. 51				
21	3. 48. 8				
22	22. 16. 23				
24	16. 44. 32				
26	11. 12. 41				
28	5. 40. 53				
30	0. 8. 57				
31	18. 37. 5				

IV. Satellite.

4	18. 0. 44 I
4	22. 46. 33 E
21	12. 11. 14 I
21	16. 56. 34 E

[52]

M A Y 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Pass. over Merid
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Inf. δ 20^d. 9^h.

1	5. 28. 28	5. 9 N	2. 1. 44	2. 35 N	23. 5 N	1. 20
7	6. 20. 12	3. 2	2. 4. 15	1. 55	22. 55	1. 8
13	7. 9. 8	0. 49 N	2. 3. 45	0. 37 N	21. 32	0. 43
19	7. 26. 26	1. 18 S	2. 1. 2	1. 5 S	19. 19	0. 9
25	8. 13. 0	3. 12	1. 27. 45	2. 41	17. 4	23. 28

V E N U S.

1	5. 5. 34	3. 21 N	2. 24. 1	2. 28 N	25. 49 N	2. 57
7	5. 15. 19	3. 23	3. 0. 39	2. 38	26. 6	3. 3
13	5. 25. 3	3. 20	3. 7. 10	2. 44	26. 0	3. 8
19	6. 4. 45	3. 11	3. 13. 32	2. 45	25. 32	3. 13
25	6. 14. 27	2. 56	3. 19. 44	2. 42	24. 41	3. 16

M A R S.

1	11. 7. 51	1. 44 S	0. 4. 10	1. 11 S	0. 35 N	21. 40
7	11. 11. 39	1. 42	0. 8. 45	1. 10	2. 24	21. 33
13	11. 15. 27	1. 39	0. 13. 21	1. 8	4. 13	21. 27
19	11. 19. 14	1. 35	0. 17. 53	1. 7	5. 59	21. 20
25	11. 23. 0	1. 31	0. 22. 24	1. 5	7. 43	21. 12

J U P I T E R. $\square$ 21^d. 10^h.

1	10. 17. 53	0. 50 S	10. 28. 54	0. 48 S	12. 37 S	19. 27
7	10. 18. 24	0. 51	10. 29. 42	0. 50	12. 21	19. 7
13	10. 18. 56	0. 51	11. 0. 25	0. 51	12. 7	18. 45
19	10. 19. 28	0. 52	11. 1. 3	0. 53	11. 55	18. 25
25	10. 20. 0	0. 52	11. 1. 36	0. 55	11. 46	18. 3

S A T U R N. $\square$ 13^d. 0^h.

1	4. 29. 2	1. 32 N	4. 22. 53	1. 34 N	15. 23 N	7. 6
7	4. 29. 15	1. 32	4. 23. 0	1. 34	15. 20	6. 43
13	4. 29. 28	1. 32	4. 23. 10	1. 33	15. 16	6. 20
19	4. 29. 40	1. 33	4. 23. 25	1. 33	15. 11	5. 57
25	4. 29. 53	1. 33	4. 23. 42	1. 32	15. 5	5. 34

M A Y 1772.

[53]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	F.	0. 25. 56. 38	1. 1. 57. 4	0. 16. 10 N	0. 17. 8 S
2	Sa.	1. 7. 59. 45	1. 14. 4. 52	0. 50. 27 S	1. 23. 26
3	Su.	1. 20. 12. 28	1. 26. 23. 0	1. 55. 41	2. 26. 44
4	M.	2. 2. 36. 34	2. 8. 53. 11	2. 56. 8	3. 23. 45
5	Tu.	2. 15. 13. 7	2. 21. 36. 22	3. 49. 10	4. 11. 54
6	W.	2. 28. 3. 10	3. 4. 33. 32	4. 31. 40	4. 48. 8
7	Th.	3. 11. 7. 36	3. 17. 45. 27	5. 0. 56	5. 9. 52
8	F.	3. 24. 27. 5	4. 1. 12. 40	5. 14. 42	5. 15. 12
9	Sa.	4. 8. 2. 8	4. 14. 55. 35	5. 11. 22	5. 2. 58
10	Su.	4. 21. 52. 52	4. 28. 54. 0	4. 50. 7	4. 32. 47
11	M.	5. 5. 58. 48	5. 13. 7. 7	4. 11. 10	3. 45. 30
12	Tu.	5. 20. 18. 43	5. 27. 33. 15	3. 16. 6	2. 43. 22
13	W.	6. 4. 50. 12	6. 12. 9. 12	2. 7. 49	1. 29. 58
14	Th.	6. 19. 29. 26	6. 26. 50. 24	0. 50. 37 S	0. 10. 21 S
15	F.	7. 4. 11. 10	7. 11. 31. 5	0. 30. 2 N	1. 9. 49 N
16	Sa.	7. 18. 49. 7	7. 26. 4. 38	1. 48. 16	2. 24. 41
17	Su.	8. 3. 16. 44	8. 10. 24. 43	2. 58. 29	3. 29. 11
18	M.	8. 17. 27. 51	8. 24. 25. 49	3. 56. 15	4. 19. 29
19	Tu.	9. 1. 18. 2	9. 8. 4. 23	4. 38. 29	4. 53. 20
20	W.	9. 14. 44. 37	9. 21. 18. 53	5. 4. 0	5. 10. 28
21	Th.	9. 27. 47. 16	10. 4. 10. 2	5. 12. 48	5. 11. 14
22	F.	10. 10. 27. 25	10. 16. 39. 58	5. 5. 54	4. 57. 3
23	Sa.	10. 22. 48. 10	10. 28. 52. 32	4. 44. 53	4. 29. 34
24	Su.	11. 4. 53. 36	11. 10. 52. 3	4. 11. 25	3. 50. 41
25	M.	11. 16. 48. 26	11. 22. 43. 28	3. 27. 34	3. 2. 13
26	Tu.	11. 28. 37. 52	0. 4. 32. 3	2. 35. 8	2. 6. 22
27	W.	0. 10. 26. 44	0. 16. 22. 29	1. 36. 12	1. 4. 56
28	Th.	0. 22. 19. 44	0. 28. 19. 6	0. 32. 52 N	0. 0. 18 N
29	F.	1. 4. 20. 54	1. 10. 25. 40	0. 32. 30 S	1. 5. 10 S
30	Sa.	1. 16. 33. 36	1. 22. 45. 7	1. 37. 18	2. 8. 34
31	Su.	1. 29. 0. 14	2. 5. 19. 13	2. 38. 34	3. 6. 56

[64]

M A Y 1772.

Days of the Month.	Days of the Week.	J's Age.	J's Passage over Merid.	J's Right Ascen. at Noon.	J's Right Asc. at Midn.	J's Declinat. at Noon.	J's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	30	23. 43	23. 57	29. 53	10. 17 N	11. 54 N
2	Sa.	1	♂	35. 54	42. 3	13. 24	14. 45
3	Su.	2	0. 31	48. 18	54. 40	15. 58	17. 0
4	M.	3	1. 20	61. 9	67. 43	17. 50	18. 27
5	Tu.	4	2. 10	74. 24	81. 9	18. 51	19. 1
6	W.	5	3. 2	87. 57	94. 48	18. 56	18. 35
7	Th.	6	3. 54	101. 40	108. 32	18. 0	17. 19
8	F.	7	4. 48	115. 24	122. 15	16. 6	14. 47
9	Sa.	8	5. 40	129. 5	135. 53	13. 16	11. 33
10	Su.	9	6. 32	142. 40	149. 27	9. 39	7. 36
11	M.	10	7. 25	156. 13	163. 0	5. 26	3. 10 N
12	Tu.	11	8. 18	169. 49	176. 40	0. 50 N	1. 31 S
13	W.	12	9. 11	183. 35	190. 35	3. 53 S	6. 11
14	Th.	13	10. 6	197. 40	204. 50	8. 25	10. 31
15	F.	14	11. 3	212. 6	219. 27	12. 27	14. 12
16	Sa.	15	12. 0	226. 52	234. 20	15. 42	16. 57
17	Su.	16	12. 58	241. 50	249. 19	17. 55	18. 35
18	M.	17	13. 55	256. 45	264. 7	18. 57	19. 2
19	Tu.	18	14. 51	271. 22	278. 29	18. 49	18. 20
20	W.	19	15. 43	285. 26	292. 12	17. 37	16. 40
21	Th.	20	16. 33	298. 48	305. 14	15. 31	14. 12
22	F.	21	17. 20	311. 30	317. 36	12. 44	11. 8
23	Sa.	22	18. 4	323. 35	329. 26	9. 27	7. 40
24	Su.	23	18. 46	335. 12	340. 53	5. 49	3. 56
25	M.	24	19. 29	346. 31	352. 7	2. 2 S	0. 6 S
26	Tu.	25	20. 11	357. 43	3. 20	1. 50 N	3. 44 N
27	W.	26	20. 53	8. 58	14. 40	5. 37	7. 27
28	Th.	27	21. 37	20. 26	26. 18	9. 13	10. 53
29	F.	28	22. 24	32. 16	38. 21	12. 28	13. 56
30	Sa.	29	23. 13	44. 34	50. 55	15. 15	16. 24
31	Su.	1	♂	57. 23	63. 58	17. 23	18. 9

M A Y 1772.

[55]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Report. Lo. Δ at Noon.	Report. Lo. Δ at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	F.	14. 52	14. 54	54. 32	54. 41	5186	5174
2	Sa.	14. 57	15. 0	54. 51	55. 1	5161	5148
3	Su.	15. 3	15. 6	55. 13	55. 26	5132	5115
4	M.	15. 10	15. 13	55. 39	55. 52	5098	5081
5	Tu.	15. 17	15. 22	56. 7	56. 22	5062	5042
6	W.	15. 26	15. 30	56. 38	56. 54	5022	5002
7	Th.	15. 35	15. 39	57. 10	57. 27	4981	4960
8	F.	15. 44	15. 49	57. 45	58. 3	4937	4915
9	Sa.	15. 54	15. 59	58. 21	58. 39	4892	4870
10	Su.	16. 4	16. 8	58. 56	59. 14	4849	4827
11	M.	16. 13	16. 17	59. 30	59. 45	4808	4789
12	Tu.	16. 21	16. 24	59. 59	60. 11	4772	4758
13	W.	16. 27	16. 28	60. 20	60. 27	4747	4739
14	Th.	16. 29	16. 29	60. 31	60. 31	4734	4734
15	F.	16. 29	16. 27	60. 28	60. 21	4737	4746
16	Sa.	16. 24	16. 20	60. 11	59. 57	4758	4775
17	Su.	16. 16	16. 10	59. 40	59. 20	4795	4820
18	M.	16. 4	15. 58	58. 58	58. 35	4846	4875
19	Tu.	15. 51	15. 44	58. 10	57. 45	4906	4937
20	W.	15. 37	15. 30	57. 19	56. 53	4970	5003
21	Th.	15. 23	15. 17	56. 29	56. 6	5033	5063
22	F.	15. 12	15. 6	55. 45	55. 26	5090	5115
23	Sa.	15. 2	14. 58	55. 9	54. 54	5137	5157
24	Su.	14. 54	14. 52	54. 42	54. 33	5173	5185
25	M.	14. 50	14. 49	54. 26	54. 22	5194	5199
26	Tu.	14. 48	14. 48	54. 20	54. 20	5202	5202
27	W.	14. 49	14. 50	54. 23	54. 28	5198	5191
28	Th.	14. 52	14. 55	54. 35	54. 44	5182	5170
29	F.	14. 58	15. 1	54. 55	55. 7	5155	5140
30	Sa.	15. 5	15. 8	55. 20	55. 34	5123	5104
31	Su.	15. 13	15. 17	55. 49	56. 4	5085	5065

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	Regulus.	84. 5. 32	82. 31. 55	80. 58. 8	79. 24. 9
5		71. 31. 36	69. 56. 34	68. 21. 21	66. 45. 58
6		58. 46. 10	57. 9. 40	55. 32. 58	53. 56. 6
7		45. 48. 57	44. 10. 58	42. 32. 50	40. 54. 30
8		32. 40. 40	31. 1. 31	29. 22. 16	27. 42. 56
9	Spica α	72. 31. 48	70. 49. 15	69. 6. 26	67. 23. 22
10		58. 44. 15	56. 59. 39	55. 14. 48	53. 29. 42
11		44. 40. 25	42. 53. 48	41. 6. 58	39. 19. 54
12		32. 21. 11	28. 32. 48	26. 44. 14	24. 55. 30
13		15. 49. 37			
13	Antares.	61. 41. 1	59. 52. 24	58. 3. 45	56. 15. 1
14		47. 11. 6	45. 22. 20	43. 33. 43	41. 45. 14
15		32. 45. 58	30. 59. 9	29. 12. 48	27. 26. 58
16	α Aquila.	71. 30. 45	69. 52. 0	68. 13. 43	66. 35. 52
17		58. 34. 55	57. 0. 42	55. 27. 16	53. 54. 37
18	β Capri-corni.	43. 17. 15	41. 32. 19	39. 47. 46	38. 3. 34
19		29. 28. 28	27. 45. 36	26. 5. 8	24. 24. 3
20		16. 4. 42			
20	α Pegasi.	65. 18. 4	63. 44. 8	62. 10. 41	60. 37. 43
21		53. 0. 56	51. 31. 14	50. 2. 8	48. 33. 39
22		41. 21. 12	39. 56. 56	38. 33. 29	37. 10. 54
23	α Arietis.	71. 9. 39	69. 40. 11	68. 10. 57	66. 41. 57
24		59. 20. 26			
21	The Sun.		121. 26. 25	119. 58. 16	118. 30. 27
22		111. 16. 18	109. 50. 22	108. 24. 43	106. 59. 21
23		99. 56. 22	98. 32. 28	97. 8. 47	95. 45. 18
24		88. 50. 45	87. 28. 19	86. 6. 0	84. 43. 50
25		77. 54. 37	76. 33. 2	75. 11. 28	73. 49. 58
26		67. 2. 52	65. 41. 29	64. 20. 5	62. 58. 39
27		56. 10. 57	54. 49. 13	53. 27. 24	52. 5. 30
28		45. 14. 43	43. 52. 15	42. 29. 38	41. 6. 52

M A Y 1772.

[57]

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	Regulus.	77. 50. 1	76. 15. 41	74. 41. 10	73. 6. 29
5		65. 10. 23	63. 34. 37	61. 58. 39	60. 22. 31
6		52. 19. 2	50. 41. 47	49. 4. 21	47. 26. 44
7		39. 16. 0	37. 37. 22	35. 58. 36	34. 19. 42
8	Spica μ	26. 3. 32			
8		79. 19. 29	77. 37. 57	75. 56. 9	74. 14. 6
9		65. 40. 2	63. 56. 28	62. 12. 39	60. 28. 35
10		51. 44. 20	49. 58. 44	48. 12. 52	46. 26. 46
11	Antares.	37. 32. 35	35. 45. 4	33. 57. 17	32. 9. 21
12		23. 6. 35	21. 17. 32	19. 28. 20	17. 39. 1
13		54. 26. 14	52. 37. 25	50. 48. 38	48. 59. 52
14		39. 56. 51	38. 8. 40	36. 20. 47	34. 33. 14
15	α Aquilæ.	25. 41. 41			
15		78. 9. 4	76. 29. 3	74. 49. 18	73. 9. 52
16		64. 58. 30	63. 21. 39	61. 45. 25	60. 9. 50
17		52. 22. 49			
17	β Capri- corni.	50. 20. 17	48. 34. 2	46. 48. 7	45. 2. 31
18		36. 19. 45	34. 36. 21	32. 53. 20	31. 10. 42
19		22. 43. 22	21. 3. 5	19. 23. 13	17. 43. 45
20					
20	α Pegasi.	59. 5. 17	57. 33. 22	56. 2. 0	54. 31. 12
21		47. 5. 47	45. 38. 34	44. 12. 3	42. 46. 16
22		35. 49. 11			
22					
22	α Arietis.	77. 10. 7	75. 39. 37	74. 9. 22	72. 39. 23
23		65. 13. 12	63. 44. 40	62. 15. 23	60. 48. 17
21		117. 2. 58	115. 35. 50	114. 9. 1	112. 42. 30
22		105. 34. 16	104. 9. 26	102. 44. 50	101. 20. 29
23	The Sun.	94. 22. 1	92. 58. 57	91. 36. 3	90. 13. 19
24		83. 21. 46	81. 59. 50	80. 38. 1	79. 16. 16
25		72. 28. 31	71. 7. 5	69. 45. 40	68. 24. 16
26		61. 37. 12	60. 15. 43	58. 54. 11	57. 32. 36
27		50. 43. 32	49. 21. 29	47. 59. 20	46. 37. 4
28		39. 43. 56			

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	The Sun.	41. 50. 18	43. 20. 4	44. 50. 2	46. 20. 13
7		53. 54. 22	55. 25. 51	56. 57. 34	58. 29. 30
8		66. 12. 37	67. 45. 58	69. 19. 33	70. 53. 23
9		78. 46. 11	80. 21. 31	81. 57. 6	83. 32. 56
10		91. 35. 54	93. 13. 16	94. 50. 54	96. 28. 46
11		104. 41. 57	106. 21. 20	108. 0. 56	109. 40. 47
12		118. 3. 27	119. 44. 38	121. 26. 1	
10	Pollux.	33. 45. 51	35. 23. 26	37. 1. 45	38. 40. 47
11		47. 5. 17	48. 47. 45	50. 30. 40	52. 14. 0
12		60. 56. 32			
12	Regulus.	23. 55. 22	25. 41. 28	27. 28. 0	29. 14. 58
13		38. 14. 51	40. 3. 40	41. 52. 41	43. 41. 54
14		52. 50. 8	54. 40. 8	56. 30. 10	58. 20. 16
15		67. 30. 50	69. 20. 53	71. 10. 52	73. 0. 45
16		82. 8. 20			
16	Spica μ	28. 24. 1	30. 13. 24	32. 2. 35	33. 51. 34
17		42. 53. 1	44. 40. 32	46. 27. 44	48. 14. 38
18		57. 4. 9	58. 49. 3	60. 33. 36	62. 17. 46
19		70. 52. 47	72. 34. 39	74. 16. 7	75. 57. 12
20		84. 16. 39			
20	Antares.	39. 17. 45	40. 54. 21	42. 30. 42	44. 6. 46
21		52. 3. 6	53. 37. 32	55. 11. 40	56. 45. 32
22		64. 30. 31	66. 2. 42	67. 34. 38	69. 6. 20
23		76. 41. 12			
23	Capri- corni.	21. 51. 18	23. 22. 26	24. 53. 22	26. 24. 7
24		33. 55. 6	35. 24. 49	36. 54. 25	38. 23. 53
25		45. 49. 35			
25	α Aquilæ.	52. 27. 55	53. 44. 28	55. 1. 19	56. 18. 30
26		62. 49. 9	64. 8. 6	65. 27. 17	66. 46. 42
27		73. 27. 6	74. 47. 48	76. 8. 40	77. 29. 44
28		84. 17. 34			
28	Fomal- haut.	54. 53. 36	56. 10. 25	57. 27. 45	58. 45. 35
29		65. 21. 45	66. 42. 17	68. 3. 12	69. 24. 30
30		76. 16. 13	77. 39. 32	79. 3. 9	80. 27. 2

M A Y 1772.

[59]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	The Sun.			38. 51. 22	40. 20. 44
6		47. 50. 37	49. 21. 13	50. 52. 3	52. 23. 6
7		60. 1. 40	61. 34. 3	63. 6. 40	64. 39. 31
8		72. 27. 28	74. 1. 46	75. 36. 19	77. 11. 8
9		85. 9. 2	86. 45. 23	88. 21. 58	89. 58. 49
10		98. 6. 54	99. 45. 18	101. 23. 56	103. 2. 49
11		111. 20. 52	113. 1. 11	114. 41. 43	116. 22. 28
10	Pollux.	40. 20. 30	42. 0. 52	43. 41. 46	45. 23. 15
11		53. 57. 47	55. 41. 56	57. 26. 28	59. 11. 20
12	Regulus.	31. 2. 17	32. 49. 59	34. 37. 58	36. 26. 16
13		45. 31. 18	47. 20. 50	49. 10. 29	51. 0. 15
14		60. 10. 24	62. 0. 32	63. 50. 39	65. 40. 45
15		74. 50. 34	76. 40. 15	78. 29. 46	80. 19. 9
16	Spica μ	35. 40. 20	37. 28. 53	39. 17. 11	41. 5. 14
17		50. 1. 14	51. 47. 28	53. 33. 22	55. 18. 56
18		64. 1. 34	65. 44. 57	67. 27. 57	69. 10. 34
19		77. 37. 53	79. 18. 10	80. 58. 4	82. 37. 33
20	Antares.	45. 42. 34	47. 18. 7	48. 53. 23	50. 28. 23
21		58. 19. 6	59. 52. 22	61. 25. 21	62. 58. 4
22		70. 37. 46	72. 8. 58	73. 39. 56	75. 10. 41
23	β Capri- corni.	27. 54. 40	29. 25. 2	30. 55. 14	32. 25. 15
24		39. 53. 13	41. 22. 27	42. 51. 34	44. 20. 38
25	α Aquilæ.	57. 36. 0	58. 53. 52	60. 12. 0	61. 30. 26
26		68. 6. 22	69. 26. 14	70. 46. 10	72. 6. 36
27		78. 50. 58	80. 12. 22	81. 33. 5	82. 55. 40
28	Fomal- haut.	60. 3. 54	61. 22. 41	62. 41. 50	64. 1. 37
29		70. 46. 11	72. 8. 14	73. 30. 3	74. 53. 15
30		81. 51. 13			

Configurations of the SATELLITES of JUPITER
at $\frac{1}{2}$ Hour past 3 o' th' Clock in the Morning.

1		5.	.1	⊙	.2		
2	2●	5.		⊙	1.		4.
3	1.0		.3.2	⊙			4.
4				1. ⊙ 3 6 2		4.	
5				⊙	.1	4 6 2	.3
6				1 6 2 4. ⊙			.3.
7		4.	.2	⊙	.3.1		
8		4.	3.	⊙	.1		.2
9	4.	3.		⊙	2.1.		
10	.4		.3	⊙	.1		
11	.4			⊙			1● 2.0 3.0
12		.4		⊙	.1	2.	.3
13			.4	1 6 2 ⊙		3.	
14	4.0		.2	⊙	.1		
15			.1	⊙	.2.4		
16		3.		⊙	2.1.		.4
17		.3	2.	⊙	.1		.4
18	1● 2.0			⊙	.3		.4
19	1.0			⊙		2.3	4.
20				1.2. ⊙		3.	4.
21			.2	⊙	.1	3.	4.
22				1. 3. ⊙	4.	.2	
23		3.	4.	⊙		1 6 2	
24		4 6 4	2.	⊙	.1		
25		4.		.3.2 ⊙	1.		
26	4.			⊙	.3.2		1.0
27	.4			1. ⊙		.3	2●
28	.4		.2	⊙	.1	3.	
29		.4		⊙	.2		3●
30		3.	4.	⊙	.1		
31		.3	2.	⊙	.1		4.0

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D.H.M. First Quarter — 8. 2. 23 Full Moon — 14. 21. 52 Last Quarter — 22. 14. 39 New Moon — 30. 10. 18
1	M.	Nicomede. Term ends.	Other Phenomena. D. 5. ☾ 1 ad α 8 ^h . 40'. ☾ 2 ad α 9 ^h . 36'. ☾ x 14 ^h . 0'. 6. ☾ 0 Ω 3 ^h . 59'. ☾ π Ω 12 ^h . 42'. 10. ☾ α 9 ^h . 13'. 11. ☾ λ 7 ^h . 16'. ☾ α 20 ^h . 56'. 12. ☾ 4 ad ζ 13 ^h . 42'. 17. ☾ β 14 ^h . 47'. ☾ ε 8 diff. Lat. 25'. 20. ☾ enters ☽ at 11 ^h . 21'. 21. ☽ Stationary. 23. ☾ δ 8 ^h . 49'. ☾ ε 15 ^h . 40'. 26. ☾ δ 7 ^h . 12'. 27. ☾ 1 ad ♄ Imm. 15 ^h . 46 ¹ / ₂ '. * 11 ^h . S. of ♄'s Cent. Em. 16 ^h . 26'. * 11 ^h . S. ☾ 2 ad ♄ 17 ^h . 26'. ☾ ε 19 ^h . 57'.
2	Tu.		
3	W.		
4	Th.	K. Geo. III. born 1738.	
5	F.	Boniface. [Oxf. T. ends.	
6	Sa.		
7	Su.	Whit-Sunday.	
8	M.	Whit-Monday.	
9	Tu.	Whit-Tuesday.	
10	W.	Prs. Amelia born.	
11	Th.	St. Barnabas.	
12	F.		
13	Sa.		
14	Su.	Trinity-Sunday.	
15	M.	On Mor. of H. Tr. 1 ret.	
16	Tu.		
17	W.	St. Alban. Oxf. T. begins.	
18	Th.		
19	F.	Trinity Term begins.	
20	Sa.	Transl. of Edward K. of [W. Sax.	
21	Su.	1 st Su. after Trinity.	
22	M.	In 8 days of H. Tr. 2 ret.	
23	Tu.		
24	W.	Nativity of St. John Baptist.	
25	Th.		
26	F.		
27	Sa.		
28	Su.	2 ^d Su. after Trinity.	
29	M.	St. Peter. In 15 days of	
30	Tu.	[H. Tr. 3 ret.	

[62]

JUNE 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	M.	2. 11. 24. 11	4. 39. 25,5	22. 10. 27	2. 34,0	
2	Tu.	2. 12. 21. 38	4. 43. 31,5	22. 18. 8	2. 24,5	9,5
3	W.	2. 13. 19. 3	4. 47. 37,9	22. 25. 26	2. 14,7	9,8
4	Th.	2. 14. 16. 28	4. 51. 44,6	22. 32. 20	2. 4,6	10,1
5	F.	2. 15. 13. 51	4. 55. 51,6	22. 38. 50	1. 54,2	10,4
6	Sa.	2. 16. 11. 13	4. 59. 58,9	22. 44. 57	1. 43,5	10,7
7	Su.	2. 17. 8. 35	5. 4. 6,6	22. 50. 40	1. 32,4	11,1
8	M.	2. 18. 5. 55	5. 8. 14,5	22. 55. 59	1. 21,1	11,3
9	Tu.	2. 19. 3. 14	5. 12. 22,5	23. 0. 54	1. 9,6	11,5
10	W.	2. 20. 0. 33	5. 16. 30,9	23. 5. 24	0. 57,8	11,8
11	Th.	2. 20. 57. 50	5. 20. 39,5	23. 9. 30	0. 45,9	11,9
12	F.	2. 21. 55. 6	5. 24. 48,1	23. 13. 11	0. 33,7	12,2
13	Sa.	2. 22. 52. 21	5. 28. 57,0	23. 16. 28	0. 21,5	12,2
14	Su.	2. 23. 49. 36	5. 33. 6,0	23. 19. 21	0. 9,1	12,4
15	M.	2. 24. 46. 50	5. 37. 15,1	23. 21. 49	Ad: 3,4	12,5
16	Tu.	2. 25. 44. 4	5. 41. 24,3	23. 23. 52	0. 16,1	12,7
17	W.	2. 26. 41. 17	5. 45. 33,7	23. 25. 30	0. 28,8	12,7
18	Th.	2. 27. 38. 30	5. 49. 43,1	23. 26. 44	0. 41,7	12,9
19	F.	2. 28. 35. 43	5. 53. 52,5	23. 27. 33	0. 54,5	12,8
20	Sa.	2. 29. 32. 56	5. 58. 2,0	23. 27. 57	1. 7,4	12,9
21	Su.	3. 0. 30. 9	6. 2. 11,5	23. 27. 56	1. 20,3	12,9
22	M.	3. 1. 27. 21	6. 6. 20,9	23. 27. 31	1. 33,1	12,8
23	Tu.	3. 2. 24. 34	6. 10. 30,3	23. 26. 41	1. 45,9	12,8
24	W.	3. 3. 21. 47	6. 14. 39,7	23. 25. 26	1. 58,7	12,8
25	Th.	3. 4. 19. 0	6. 18. 49,0	23. 23. 46	2. 11,5	12,8
26	F.	3. 5. 16. 13	6. 22. 58,2	23. 21. 42	2. 24,1	12,6
27	Sa.	3. 6. 13. 27	6. 27. 7,3	23. 19. 13	2. 36,5	12,4
28	Su.	3. 7. 10. 40	6. 31. 16,1	23. 16. 19	2. 48,8	12,3
29	M.	3. 8. 7. 53	6. 35. 24,9	23. 13. 1	3. 0,9	12,1
30	Tu.	3. 9. 5. 6	6. 39. 33,3	23. 9. 18	3. 12,9	12,0
						11,7

JUNE 1772.

[63]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 48. 8	1. 8. 3	2. 23. 5	0. 006406	6. 26. 43
7	15. 48. 1	1. 8. 6	2. 23. 3	0. 006703	6. 26. 24
13	15. 47. 5	1. 8. 7	2. 23. 2	0. 006924	6. 26. 5
19	15. 47. 1	1. 8. 8	2. 23. 0	0. 007099	6. 25. 46
25	15. 46. 9	1. 8. 8	2. 23. 0	0. 007217	6. 25. 27

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Immerfions.			II. Satellite. Immerfions.			III. Satellite.		
Days	H. M. S.		Days	H. M. S.		Days	H. M. S.	
2	13. 5. 10		2	13* 45. 8		4	10. 2. 53 I	
4	7. 33. 12		6	3. 3. 7		4	13. 38. 4 E	
6	2. 1. 17		9	16. 21. 2		11	14* 1. 28 I	
7	20. 29. 21		13	5. 38. 55		11	17. 36. 28 E	
9	14* 57. 23		16	18. 56. 44		18	17. 59. 57 I	
11	9. 25. 23		20	8. 14. 30		18	21. 34. 47 E	
13	3. 53. 26		23	21. 32. 16		25	21. 58. 27 I	
14	22. 21. 27		27	10. 50. 1		26	1. 33. 9 E	
16	16. 49. 28					IV. Satellite.		
18	11. 17. 28					7	6. 19. 26 I	
20	5. 45. 30					7	11. 4. 4 E	
22	0. 13. 29					24	0. 27. 14 I	
23	18. 41. 30					24	5. 10. 54 E	
25	13* 9. 35							
27	7. 37. 39							
29	2. 5. 42							
30	20. 33. 43							

[64]

JUNE 1772.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 15^d.

1	9. 2. 25	5. 6 S	1. 25. 45	3. 50 S	15. 29 N	22. 55
7	9. 20. 0	6. 18	1. 26. 45	4. 3	15. 31	22. 36
13	10. 9. 23	6. 57	2. 0. 23	3. 41	16. 39	22. 27
19	11. 1. 38	6. 43	2. 6. 25	2. 51	18. 36	22. 28
25	11. 28. 3	5. 10	2. 14. 40	1. 45	20. 51	22. 39

VENUS. Greatest Elong. 2^d.

1	6. 25. 43	2. 33 N	3. 26. 42	2. 32 N	23. 20 N	3. 18
7	7. 5. 21	2. 9	4. 2. 27	2. 18	21. 52	3. 17
13	7. 14. 57	1. 42	4. 7. 51	1. 57	20. 13	3. 14
19	7. 24. 32	1. 11	4. 12. 53	1. 27	18. 21	3. 9
25	8. 4. 5	0. 37	4. 17. 26	0. 50	16. 26	3. 2

MARS.

1	11. 27. 23	1. 26 S	0. 27. 38	1. 2 S	9. 41 N	21. 4
7	0. 1. 7	1. 21	1. 2. 5	0. 58	11. 17	20. 56
13	0. 4. 50	1. 16	1. 6. 30	0. 55	12. 50	20. 48
19	0. 8. 31	1. 11	1. 10. 54	0. 52	14. 17	20. 40
25	0. 12. 11	1. 5	1. 15. 13	0. 50	15. 39	20. 32

JUPITER.

1	10. 20. 37	0. 53 S	11. 2. 6	0. 56 S	11. 36 S	17. 35
7	10. 21. 9	0. 54	11. 2. 25	0. 58	11. 31	17. 11
13	10. 21. 41	0. 54	11. 2. 37	1. 0	11. 28	16. 47
19	10. 22. 13	0. 55	11. 2. 42	1. 2	11. 28	16. 23
25	10. 22. 45	0. 55	11. 2. 40	1. 3	11. 31	15. 59

SATURN.

1	5. 0. 8	1. 34 N	4. 24. 7	1. 31 N	14. 56 N	5. 7
7	5. 0. 21	1. 34	4. 24. 33	1. 31	14. 48	4. 44
13	5. 0. 34	1. 35	4. 25. 0	1. 31	14. 39	4. 21
19	5. 0. 47	1. 35	4. 25. 31	1. 30	14. 28	3. 59
25	5. 1. 0	1. 36	4. 26. 3	1. 30	14. 16	3. 36

JUNE 1772.

[65]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	M.	2. 11. 42. 10	2. 18. 8. 58	3. 33. 7 S	3. 56. 54 S
2	Tu.	2. 24. 39. 42	3. 1. 14. 12	4. 17. 49	4. 35. 28
3	W.	3. 7. 52. 24	3. 14. 34. 14	4. 49. 36	4. 59. 55
4	Th.	3. 21. 18. 52	3. 28. 6. 42	5. 6. 8	5. 8. 5
5	F.	4. 4. 57. 25	4. 11. 50. 39	5. 5. 41	4. 58. 50
6	Sa.	4. 18. 46. 15	4. 25. 43. 52	4. 47. 38	4. 32. 5
7	Su.	5. 2. 43. 27	5. 9. 44. 44	4. 12. 25	3. 48. 54
8	M.	5. 16. 47. 40	5. 23. 51. 57	3. 21. 46	2. 51. 32
9	Tu.	6. 0. 57. 31	6. 8. 4. 22	2. 18. 30	1. 43. 18
10	W.	6. 15. 11. 27	6. 22. 19. 27	1. 6. 25 S	0. 28. 26 S
11	Th.	6. 29. 27. 44	7. 6. 36. 7	0. 9. 58 N	0. 48. 11 N
12	F.	7. 13. 44. 4	7. 20. 51. 7	1. 25. 33	2. 1. 30
13	Sa.	7. 27. 56. 49	8. 5. 0. 35	2. 35. 25	3. 6. 41
14	Su.	8. 12. 1. 59	8. 19. 0. 21	3. 34. 56	3. 59. 41
15	M.	8. 25. 55. 10	9. 2. 45. 56	4. 20. 43	4. 37. 44
16	Tu.	9. 9. 32. 25	9. 16. 14. 12	4. 50. 36	4. 59. 19
17	W.	9. 22. 50. 54	9. 29. 22. 32	5. 3. 52	5. 4. 21
18	Th.	10. 5. 49. 12	10. 12. 10. 44	5. 0. 59	4. 53. 52
19	F.	10. 18. 27. 30	10. 24. 39. 44	4. 43. 19	4. 29. 28
20	Sa.	11. 0. 47. 47	11. 6. 52. 9	4. 12. 38	3. 53. 5
21	Su.	11. 12. 53. 21	11. 18. 51. 55	3. 31. 6	3. 6. 57
22	M.	11. 24. 48. 32	0. 0. 43. 40	2. 40. 55	2. 13. 12
23	Tu.	0. 6. 38. 11	0. 12. 32. 39	1. 44. 7	1. 13. 57
24	W.	0. 18. 27. 50	0. 24. 24. 16	0. 42. 52 N	0. 11. 17 N
25	Th.	1. 0. 22. 41	1. 6. 23. 41	0. 20. 35 S	0. 52. 27 S
26	F.	1. 12. 27. 53	1. 18. 35. 45	1. 23. 56	1. 54. 46
27	Sa.	1. 24. 47. 45	2. 1. 4. 15	2. 24. 34	2. 52. 52
28	Su.	2. 7. 25. 33	2. 13. 51. 53	3. 19. 23	3. 43. 42
29	M.	2. 20. 23. 16	2. 26. 59. 46	4. 5. 23	4. 24. 1
30	Tu.	3. 3. 41. 10	3. 10. 27. 16	4. 39. 16	4. 50. 47

[66]

J U N E 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	2	0. 3	70. 42	77. 29	18. 42 N	19. 1 N
2	Tu.	3	0. 55	84. 22	91. 18	19. 4	18. 52
3	W.	4	1. 49	98. 16	105. 15	18. 25	17. 42
4	Th.	5	2. 43	112. 13	119. 9	16. 44	15. 31
5	F.	6	3. 36	126. 3	132. 54	14. 6	12. 28
6	Sa.	7	4. 28	139. 42	146. 27	10. 39	8. 41
7	Su.	8	5. 20	153. 10	159. 51	6. 35	4. 24 N
8	M.	9	6. 11	166. 33	173. 14	2. 8 N	0. 11 S
9	Tu.	10	7. 2	179. 58	186. 43	2. 30 S	4. 47
10	W.	11	7. 55	193. 33	200. 28	7. 0	9. 8
11	Th.	12	8. 49	207. 27	214. 32	11. 8	12. 59
12	F.	13	9. 44	221. 43	228. 58	14. 37	16. 2
13	Sa.	14	10. 41	236. 17	243. 39	17. 12	18. 6
14	Su.	15	11. 37	251. 2	258. 23	18. 43	19. 2
15	M.	16	12. 33	265. 42	272. 55	19. 4	18. 49
16	Tu.	17	13. 27	280. 1	286. 59	18. 18	17. 32
17	W.	18	14. 18	293. 48	300. 27	16. 32	15. 20
18	Th.	19	15. 7	306. 56	313. 15	13. 58	12. 27
19	F.	20	15. 53	319. 25	325. 27	10. 49	9. 5
20	Sa.	21	16. 36	331. 21	337. 9	7. 16	5. 23
21	Su.	22	17. 19	342. 53	348. 33	3. 28 S	1. 32 S
22	M.	23	18. 1	354. 11	359. 47	0. 24 N	2. 20 N
23	Tu.	24	18. 43	5. 24	11. 3	4. 14	6. 6
24	W.	25	19. 27	16. 45	22. 31	7. 54	9. 39
25	Th.	26	20. 12	28. 23	34. 22	11. 18	12. 50
26	F.	27	20. 59	40. 27	46. 41	14. 16	15. 32
27	Sa.	28	21. 48	53. 2	59. 33	16. 39	17. 35
28	Su.	29	22. 41	66. 12	72. 58	18. 18	18. 47
29	M.	30	23. 35	79. 51	86. 50	19. 2	19. 2
30	Tu.	1	0	93. 53	100. 58	18. 46	18. 13

JUNE 1772.

[67]

Days of the Month.	Days of the Week.	Semidr. at Noon.	Semidr. at Mid- night.	Hor. Par. at Noon.	Hor. Par. at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	M.	15. 21	15. 25	56. 20	56. 36	5045	5025
2	Tu.	15. 30	15. 34	56. 52	57. 8	5004	4984
3	W.	15. 38	15. 42	57. 23	57. 38	4965	4946
4	Th.	15. 46	15. 50	57. 51	58. 5	4930	4912
5	F.	15. 53	15. 56	58. 18	58. 30	4896	4881
6	Sa.	16. 0	16. 2	58. 42	58. 52	4866	4854
7	Su.	16. 5	16. 8	59. 2	59. 11	4842	4831
8	M.	16. 10	16. 12	59. 20	59. 27	4820	4811
9	Tu.	16. 14	16. 15	59. 33	59. 38	4804	4798
10	W.	16. 16	16. 16	59. 41	59. 42	4794	4793
11	Th.	16. 16	16. 16	59. 42	59. 40	4793	4795
12	F.	16. 14	16. 13	59. 35	59. 29	4801	4809
13	Sa.	16. 10	16. 7	59. 20	59. 8	4820	4834
14	Su.	16. 3	15. 59	58. 55	58. 39	4850	4870
15	M.	15. 54	15. 49	58. 22	58. 3	4891	4915
16	Tu.	15. 44	15. 38	57. 43	57. 22	4940	4966
17	W.	15. 32	15. 26	57. 0	56. 39	4994	5021
18	Th.	15. 21	15. 15	56. 18	55. 59	5048	5072
19	F.	15. 10	15. 5	55. 40	55. 23	5097	5119
20	Sa.	15. 1	14. 58	55. 7	54. 55	5140	5155
21	Su.	14. 55	14. 52	54. 44	54. 35	5170	5182
22	M.	14. 51	14. 50	54. 29	54. 26	5190	5194
23	Tu.	14. 50	14. 50	54. 25	54. 26	5195	5194
24	W.	14. 51	14. 53	54. 31	54. 38	5187	5178
25	Th.	14. 56	14. 59	54. 47	54. 58	5166	5152
26	F.	15. 2	15. 7	55. 12	55. 27	5133	5114
27	Sa.	15. 11	15. 16	55. 44	56. 2	5091	5068
28	Su.	15. 21	15. 27	56. 21	56. 41	5044	5018
29	M.	15. 32	15. 38	57. 1	57. 21	4992	4957
30	Tu.	15. 43	15. 48	57. 40	57. 58	4943	4921

[68]

J U N E 1772.

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
3	Regulus.	49. 1. 30	47. 22. 23	45. 43. 8	44. 3. 43
4		35. 44. 41	34. 4. 32	32. 24. 20	30. 44. 6
5		22. 23. 2	20. 43. 20	19. 3. 57	17. 24. 57
6	Spica α	61. 50. 8	60. 6. 15	58. 22. 14	56. 38. 5
7		47. 55. 10	46. 10. 12	44. 25. 6	42. 39. 53
8		33. 51. 54	32. 5. 59	30. 19. 59	28. 33. 52
9		19. 42. 7			
9	Antares.	65. 32. 17	63. 46. 41	62. 1. 3	60. 15. 21
10		51. 26. 37	49. 40. 54	47. 55. 15	46. 9. 41
11		37. 23. 28	35. 38. 47	33. 54. 20	32. 10. 9
12	α Aquilæ.	76. 6. 2	74. 28. 55	72. 52. 3	71. 15. 27
13		63. 17. 31	61. 43. 12	60. 9. 26	58. 36. 16
14		51. 0. 20			
14	β Capri- corni.	48. 43. 14	46. 58. 21	45. 13. 42	43. 29. 16
15		34. 50. 52	33. 8. 0	31. 25. 24	29. 43. 6
16		21. 15. 50			
16	α Pegasi.	70. 16. 46	68. 40. 50	67. 5. 19	65. 30. 11
17		57. 41. 23	56. 9. 3	54. 37. 16	53. 6. 0
18		45. 38. 17	44. 10. 40	42. 43. 49	41. 17. 46
19		34. 20. 31			
19	α Arietis.	75. 26. 38	73. 55. 9	72. 23. 56	70. 53. 1
20		63. 22. 30	61. 53. 12	60. 24. 8	58. 55. 21
21		51. 35. 5	50. 7. 46	48. 40. 42	47. 13. 53
22		40. 3. 35	38. 38. 23	37. 13. 30	35. 48. 56
20	The Sun.	118. 40. 4	117. 16. 17	115. 52. 41	114. 29. 16
21		107. 34. 42	106. 12. 16	104. 49. 58	103. 27. 47
22		96. 38. 24	95. 16. 47	93. 55. 13	92. 33. 41
23		85. 46. 29	84. 25. 4	83. 3. 38	81. 42. 10
24		74. 54. 2	73. 32. 12	72. 10. 16	70. 48. 15
25		63. 56. 21	62. 33. 34	61. 10. 35	59. 47. 28
26		52. 49. 6	51. 24. 51	50. 0. 23	48. 35. 44
27		41. 29. 8	40. 3. 9	38. 36. 57	

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
2	Regulus.	55. 36. 13	53. 57. 49	52. 19. 13	50. 40. 27
3		42. 24. 10	40. 44. 28	39. 4. 39	37. 24. 43
4		29. 3. 49	27. 23. 25	25. 43. 10	24. 3. 2
5		15. 46. 24			
5	Spica α	68. 44. 14	67. 0. 55	65. 17. 28	63. 33. 52
6		54. 53. 47	53. 9. 20	51. 24. 45	49. 40. 1
7		40. 54. 32	39. 9. 3	37. 23. 26	35. 37. 44
8		26. 47. 41	25. 1. 24	23. 15. 3	21. 28. 37
9	Antares.	58. 29. 37	56. 43. 51	54. 58. 6	53. 12. 21
10		44. 24. 11	42. 38. 46	40. 53. 30	39. 8. 24
11		30. 26. 16			
11	α Aquilæ.	82. 36. 22	80. 58. 32	79. 20. 52	77. 43. 22
12		69. 39. 7	68. 3. 6	66. 27. 30	64. 52. 18
13		57. 3. 39	55. 31. 44	54. 0. 31	52. 30. 1
14	β Capri- corni.	41. 45. 5	40. 1. 8	38. 17. 27	36. 34. 2
15		28. 1. 4	26. 19. 19	24. 37. 52	22. 56. 42
16	α Pegasi.	63. 55. 29	62. 21. 15	60. 47. 29	59. 14. 12
17		51. 35. 17	50. 5. 5	48. 35. 31	47. 6. 35
18		39. 52. 29	38. 28. 6	37. 4. 36	35. 42. 4
19	α Arietis.	69. 22. 22	67. 52. 0	66. 21. 54	64. 52. 4
20		57. 26. 48	55. 58. 30	54. 30. 27	53. 2. 38
21		45. 47. 19	44. 20. 58	42. 54. 54	41. 29. 6
22		34. 24. 43			
19	The Sun.	113. 6. 2	111. 42. 58	110. 20. 3	120. 4. 3
20		102. 5. 44	100. 43. 46	99. 21. 54	108. 57. 18
21		91. 12. 13	89. 50. 46	88. 29. 20	98. 0. 6
22		80. 20. 40	78. 59. 6	77. 37. 29	87. 7. 54
23		69. 26. 7	68. 3. 53	66. 41. 30	76. 15. 47
24		58. 24. 10	57. 0. 41	55. 37. 1	65. 19. 0
25		47. 10. 51	45. 45. 45	44. 20. 26	54. 13. 9
26					42. 54. 53

[70]

J U N E 1772.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	The Sun.		38. 54. 1	40. 27. 50	42. 1. 52
5		49. 55. 4	51. 30. 15	53. 5. 36	54. 41. 8
6		62. 41. 16	64. 17. 45	65. 54. 23	67. 31. 9
7		75. 37. 15	77. 14. 53	78. 52. 38	80. 30. 31
8		88. 41. 53	90. 20. 31	91. 39. 13	93. 38. 4
9		101. 53. 42	103. 33. 4	105. 12. 31	106. 52. 2
10		115. 10. 36	116. 50. 27	118. 30. 20	120. 10. 14
8	Regulus.	20. 28. 30	22. 11. 35	23. 55. 6	25. 39. 2
9		34. 23. 37	36. 9. 14	37. 55. 0	39. 40. 57
10		48. 32. 44	50. 19. 24	52. 6. 8	53. 52. 56
11		62. 47. 37	64. 34. 40	66. 21. 42	68. 8. 45
12		77. 3. 33			
12	Spica μ	23. 18. 59	25. 6. 0	26. 52. 58	28. 39. 53
13		37. 32. 59	39. 19. 14	41. 5. 20	42. 51. 16
14		51. 38. 29	53. 23. 19	55. 7. 55	56. 52. 18
15		65. 30. 32	67. 13. 23	68. 55. 57	70. 38. 12
16		79. 5. 24			
16	Antares.	34. 13. 10	35. 50. 58	37. 28. 38	39. 6. 10
17		47. 11. 9	48. 47. 30	50. 23. 37	51. 59. 30
18		59. 55. 17	61. 29. 38	63. 3. 42	64. 37. 31
19		72. 22. 40			
19	β Capri- corni.	17. 31. 23	19. 4. 34	20. 37. 29	22. 10. 9
20		29. 49. 53	31. 21. 9	32. 52. 14	34. 23. 7
21		41. 54. 55			
21	α Aquilæ.	49. 15. 5	50. 30. 57	51. 47. 14	53. 3. 55
22		59. 32. 16	60. 50. 44	62. 9. 26	63. 28. 21
23		70. 5. 56	71. 25. 58	72. 46. 10	74. 6. 32
24		80. 50. 41	82. 11. 57	83. 33. 21	84. 54. 53
25	Fomal- haut.	61. 47. 50	63. 6. 59	64. 26. 34	65. 46. 33
26		72. 32. 25	73. 54. 41	75. 17. 16	76. 40. 13
27		83. 39. 46			
27	α Pegasi.	66. 54. 49	68. 24. 15	69. 54. 2	71. 24. 9
28		78. 59. 44	80. 31. 50	82. 4. 15	83. 37. 9
29	α Arietis.	47. 50. 3	49. 25. 32	51. 1. 27	52. 37. 46
30		60. 45. 12			

JUNE 1772.

[71]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	The Sun.	43. 36. 7	45. 10. 34	46. 45. 13	48. 20. 3
5		56. 16. 50	57. 52. 42	59. 28. 44	61. 4. 55
6		69. 8. 5	70. 45. 10	72. 22. 23	73. 59. 45
7		82. 8. 32	83. 46. 42	85. 24. 58	87. 3. 22
8		95. 16. 59	96. 56. 2	98. 35. 10	100. 14. 23
9		108. 31. 37	110. 11. 17	111. 51. 0	113. 30. 47
8	Regulus.	27. 23. 20	29. 7. 59	30. 52. 56	32. 38. 8
9		41. 27. 4	43. 13. 19	44. 59. 40	46. 46. 9
10		55. 39. 48	57. 26. 42	59. 13. 38	61. 0. 37
11		69. 55. 47	71. 42. 48	73. 29. 46	75. 16. 41
12	Spica α	30. 26. 42	32. 13. 27	34. 0. 4	35. 46. 35
13		44. 37. 4	46. 22. 42	48. 8. 9	49. 53. 25
14		58. 36. 27	60. 20. 21	62. 4. 0	63. 47. 24
15		72. 20. 15	74. 1. 57	75. 43. 23	77. 24. 32
16	Antares.	40. 43. 32	42. 20. 44	43. 57. 44	45. 34. 53
17		53. 35. 9	55. 10. 34	56. 45. 44	58. 20. 38
18		66. 11. 3	67. 44. 21	69. 17. 22	70. 50. 9
19	β Capri- corni.	23. 42. 34	25. 14. 44	26. 46. 41	28. 18. 24
20		35. 53. 49	37. 24. 20	38. 54. 41	40. 24. 53
21	α Aquilæ.	54. 20. 57	55. 38. 20	56. 56. 1	58. 14. 0
22		64. 47. 29	66. 6. 49	67. 26. 20	68. 46. 3
23		75. 27. 3	76. 47. 44	78. 8. 34	79. 29. 33
24		86. 16. 33			
24	Fomal- haut.	56. 35. 44	57. 53. 4	59. 10. 52	60. 29. 7
25		67. 6. 58	68. 27. 46	69. 48. 57	71. 10. 30
26		78. 3. 29	79. 27. 5	80. 51. 0	82. 15. 14
27	α Pegasi.	72. 54. 36	74. 25. 24	75. 56. 30	77. 27. 58
28		85. 10. 4			
28	α Arietis.	41. 32. 46	43. 0. 22	44. 40. 27	46. 15. 1
29		54. 14. 31	55. 51. 39	57. 29. 8	59. 6. 59

[72]

JUNE 1772.

Configurations of the SATELLITES of JUPITER at 3 o'clock in the Morning.

1		3.2	⊙	1.	4.	
2		1.	⊙	3.6.2		4.
3	1.2.2.		⊙		3.	4.
4		2.	⊙	1.	3.	4.
5	3.		⊙	2.		4.
6		3.	⊙	1.	2.	4.
7		3.	⊙	1.2.		4.
8		3.2.	⊙	4.	1.	
9		4.	⊙	1.	3.	2.
10		4.	⊙	1.2.		3.
11	4.		⊙		3.	1.0
12	4.		⊙	1.		3.2.0
13	4.		⊙	3.	1.	2.
14	4.	3.	⊙	1.2.		
15		4.	⊙	3.2.	1.	
16	3.0		⊙	4.1.	2.	
17			⊙	4.	1.2.	3.
18		2.	⊙	1.		4.
19			⊙	2.	1.	3.
20		3.	⊙	1.	2.	4.
21		3.	⊙	1.	2.	4.
22		3.	⊙	2.		4.
23	3.0		⊙	1.	2.	4.
24			⊙	1.2.	4.	3.
25	4.		⊙	1.		2.
26	1.		⊙	4.		2.
27		4.	⊙	3.	1.	2.
28	4.	3.	⊙	1.		2.
29	4.	3.	⊙	2.	1.	
30	4.		⊙	1.	3.	2.

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
1	W.		D. H. M.
2	Th.	Visitation of V. Mary.	First Quarter — 7. 6. 50
3	F.		Full Moon — 14. 8. 10
4	Sa.	Transl. of St. Martin.	Last Quarter — 22. 8. 3
			New Moon — 29. 19. 22
5	Su.	3d Sunday after Trinity.	
6	M.	In 3 weeks of H. Tr. 4 ret.	Other Phenomena.
7	Tu.	Cambr. Commencement.	D.
8	W.	Term ends.	1. $\hbar \alpha \Omega$ diff. Lat. 62'.
9	Th.		2. $\zeta 1$ ad $\alpha \S$ 14 ^h . 59'.
10	F.	Cambridge Term ends.	$\zeta 2$ ad $\alpha \S$ 15 ^h . 54'.
11	Sa.		$\zeta \kappa \S$ 20 ^h . 12'.
			3. $\S n \Pi$ diff. Lat. 53'.
12	Su.	4th Sunday after Trinity.	$\zeta o \Omega$ 9 ^h . 56'.
13	M.	Oxford Act.	$\zeta \pi \Omega$ 18 ^h . 29 ^h .
14	Tu.		4. $\S \mu \Pi$ diff. Lat. 59'.
15	W.	Swithin.	5. $\zeta \nu \Omega$ 13 ^h . 54'.
16	Th.		6. $\S \nu \Omega$ diff. Lat. 41'.
17	F.		8. $\zeta \lambda \Omega$ 13 ^h . 6'.
18	Sa.	Oxford Term ends.	9. $\zeta \alpha \S$ 3 ^h . 3'.
			$\zeta 4$ ad $\zeta \S$ 20 ^h . 11'.
19	Su.	5th Sunday after Trinity.	10. $\zeta \theta \S$ 4 ^h . 35'.
20	M.	Margaret.	14. $\zeta \beta \nu \S$ 23 ^h . 9'.
21	Tu.		17. $\zeta \theta \S$ 6 ^h . 48'.
22	W.	Q. of Denmark born 1751.	20. $\zeta \delta \S$ 16 ^h . 39'.
23	Th.	[Magdalen.	$\zeta \varepsilon \S$ 23 ^h . 31'.
24	F.		21. $\zeta \zeta \S$ 4 ^h . 16'.
25	Sa.	St. James.	$\odot$ enters Ω at 22 ^h . 13'.
			$\S$ Stationary.
26	Su.	6th Sunday after Trinity.	25. $\zeta 1$ ad $\delta \S$ 1 ^h . 42'.
27	M.	[S. Anne.	$\zeta 2$ ad $\delta \S$ 2 ^h . 11'.
28	Tu.		$\zeta \varepsilon \S$ 4 ^h . 44'.
29	W.		30. $\zeta o \Omega$ 17 ^h . 53'.
30	Th.		31. $\zeta \pi \Omega$ 2 ^h . 14'.
31	F.		

JULY 1772.

[75]

Days	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15.46,9	1. 8,6	2.23,0	0.007249	6.25. 8
7	15.47,0	1. 8,3	2.23,0	0.007183	6.24.49
13	15.47,2	1. 8,0	2.23,1	0.007043	6.24.30
19	15.47,7	1. 7,6	2.23,2	0.006852	6.24.11
25	15.48,3	1. 7,1	2.23,4	0.006605	6.23.52

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immersion.		II. Satellite. Immersion.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	15* 1.50	1	0. 7.58	3	1.57.11 I
4	9.29.58	4	13*25.50	3	5.31.41 E
6	3.58. 4	8	2.43.50	10	5.56.14 I
7	22.26.13	11	16* 2. 4	17	9* 5.47 I
9	16.54.24	15	5.20.13	24	13*55.57 I
11	11*22.36	18	18.38.33	31	17.56.39 I
13	5.50.53	22	7.56.59	IV. Satellite.	
15	0.19.10	25	21.15.31	10	18.36. 3 I
16	18.47.28	29	10*34.14	10	23.18.23 E
18	13*15.48			27	12*47.48 I
20	7.44.14			27	17.28.32 E
22	2.12.38				
23	20.41. 9				
25	15* 9.37				
27	9*38.11				
29	4. 6.43				
30	22.35.22				

[76]

JULY 1772.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Pass. over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Sup. δ 14^d. 14^h.

1	0. 29. 41	1. 57 S	2. 24. 54	0. 32 S	22. 50 N	22. 54
7	2. 6. 2	2. 26 N	3. 6. 51	0. 35 N	23. 53	23. 22
13	3. 13. 36	5. 55	3. 19. 38	1. 24	23. 25	23. 53
19	4. 17. 43	6. 59	4. 2. 17	1. 46	21. 24	0. 23
25	5. 16. 17	6. 2	4. 14. 11	1. 43	18. 14	0. 48

VENUS.

1	8. 13. 36	0. 3 N	4. 21. 27	0. 5 N	14. 27 N	2. 52
7	8. 23. 7	0. 30 S	4. 24. 44	0. 49 S	12. 31	2. 38
13	9. 2. 37	1. 3	4. 27. 7	1. 53	10. 43	2. 21
19	9. 12. 6	1. 34	4. 28. 22	3. 7	9. 8	2. 0
25	9. 21. 35	2. 2	4. 28. 20	4. 26	7. 54	1. 35

MARS.

1	0. 15. 50	0. 59 S	1. 19. 31	0. 46 S	16. 53 N	20. 24
7	0. 19. 27	0. 53	1. 23. 46	0. 42	18. 3	20. 17
13	0. 23. 2	0. 47	1. 27. 58	0. 38	19. 7	20. 9
19	0. 26. 35	0. 41	2. 2. 7	0. 34	20. 4	20. 2
25	1. 0. 6	0. 34	2. 6. 14	0. 29	20. 54	19. 56

JUPITER.

1	10. 23. 17	0. 56 S	11. 2. 31	1. 5 S	11. 35 S	15. 33
7	10. 23. 49	0. 56	11. 2. 16	1. 6	11. 42	15. 8
13	10. 24. 21	0. 57	11. 1. 54	1. 8	11. 52	14. 42
19	10. 24. 53	0. 57	11. 1. 25	1. 9	12. 3	14. 16
25	10. 25. 25	0. 58	11. 0. 52	1. 11	12. 17	13. 50

SATURN.

1	5. 1. 12	1. 36 N	4. 26. 30	1. 30 N	14. 3 N	3. 13
7	5. 1. 25	1. 36	4. 27. 15	1. 29	13. 50	2. 51
13	5. 1. 38	1. 37	4. 27. 54	1. 29	13. 36	2. 29
19	5. 1. 51	1. 37	4. 28. 34	1. 29	13. 22	2. 8
25	5. 2. 3	1. 38	4. 29. 16	1. 29	13. 8	1. 46

JULY 1772.

[77]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D.M.S.
1	W.	3. 17. 17. 43	3. 24. 12. 5	4. 58. 14 S	5. 1. 27 S
2	Th.	4. 1. 9. 52	4. 8. 10. 34	5. 0. 12	4. 54. 26
3	F.	4. 15. 13. 34	4. 22. 18. 17	4. 44. 9	4. 29. 28
4	Sa.	4. 29. 24. 10	5. 6. 30. 52	4. 10. 34	3. 47. 45
5	Su.	5. 13. 37. 41	5. 20. 44. 24	3. 21. 21	2. 51. 50
6	M.	5. 27. 50. 39	6. 4. 56. 12	2. 19. 38	1. 45. 18
7	Tu.	6. 12. 0. 50	6. 19. 4. 31	1. 9. 27 S	0. 32. 32 S
8	W.	6. 26. 6. 57	7. 3. 8. 16	0. 4. 42 N	0. 41. 48 N
9	Th.	7. 10. 8. 11	7. 17. 6. 41	1. 18. 6	1. 53. 7
10	F.	7. 24. 3. 36	8. 0. 58. 52	2. 26. 15	2. 57. 4
11	Sa.	8. 7. 52. 5	8. 14. 43. 21	3. 25. 5	3. 49. 59
12	Su.	8. 21. 32. 5	8. 28. 18. 19	4. 11. 27	4. 29. 8
13	M.	9. 5. 1. 33	9. 11. 41. 33	4. 42. 59	4. 52. 49
14	Tu.	9. 18. 18. 4	9. 24. 50. 54	4. 58. 35	5. 0. 20
15	W.	10. 1. 19. 54	10. 7. 44. 54	4. 58. 12	4. 52. 16
16	Th.	10. 14. 5. 54	10. 20. 22. 53	4. 42. 45	4. 29. 52
17	F.	10. 26. 35. 54	11. 2. 45. 11	4. 13. 53	3. 55. 2
18	Sa.	11. 8. 50. 58	11. 14. 53. 33	3. 33. 36	3. 9. 59
19	Su.	11. 20. 53. 27	11. 26. 51. 2	2. 44. 23	2. 17. 3
20	M.	0. 2. 46. 48	0. 8. 41. 26	1. 48. 25	1. 18. 37
21	Tu.	0. 14. 35. 30	0. 20. 29. 39	0. 48. 3 N	0. 16. 55 N
22	W.	0. 26. 24. 31	1. 2. 20. 52	0. 14. 29 S	0. 45. 50 S
23	Th.	1. 8. 19. 19	1. 14. 20. 33	1. 16. 54	1. 47. 20
24	F.	1. 20. 25. 21	1. 26. 34. 16	2. 16. 48	2. 45. 4
25	Sa.	2. 2. 47. 45	2. 9. 6. 26	3. 11. 37	3. 36. 13
26	Su.	2. 15. 30. 50	2. 22. 1. 4	3. 58. 27	4. 17. 59
27	M.	2. 28. 37. 28	3. 5. 20. 6	4. 34. 18	4. 47. 8
28	Tu.	3. 12. 8. 54	3. 19. 3. 31	4. 56. 5	5. 0. 52
29	W.	3. 26. 3. 45	4. 3. 8. 54	5. 1. 11	4. 56. 56
30	Th.	4. 10. 18. 20	4. 17. 31. 24	4. 47. 58	4. 34. 23
31	F.	4. 24. 47. 4	5. 2. 4. 33	4. 16. 14	3. 53. 50

[78] JULY 1772.							
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	2	0. 30	108. 5	115. 11	17. 25 N	16. 21 N
2	Th.	3	1. 24	122. 16	129. 18	15. 2	13. 30
3	F.	4	2. 18	136. 16	143. 11	11. 46	9. 51
4	Sa.	5	3. 11	150. 3	156. 52	7. 47	5. 36
5	Su.	6	4. 3	163. 38	170. 22	3. 21 N	1. 2 N
6	M.	7	4. 54	177. 6	183. 50	1. 17 S	3. 35 S
7	Tu.	8	5. 45	190. 35	197. 23	5. 49	7. 59
8	W.	9	6. 39	204. 15	211. 9	10. 1	11. 55
9	Th.	10	7. 32	218. 8	225. 12	13. 38	15. 9
10	F.	11	8. 27	232. 18	239. 28	16. 26	17. 29
11	Sa.	12	9. 23	246. 40	253. 52	18. 16	18. 47
12	Su.	13	10. 18	261. 4	268. 13	19. 1	18. 58
13	M.	14	11. 12	275. 17	282. 16	18. 39	18. 5
14	Tu.	15	12. 4	289. 7	295. 51	17. 17	16. 15
15	W.	16	12. 54	302. 26	308. 53	15. 2	13. 39
16	Th.	17	13. 41	315. 11	321. 20	12. 6	10. 27
17	F.	18	14. 26	327. 22	333. 18	8. 41	6. 51
18	Sa.	19	15. 10	339. 7	344. 52	4. 58	3. 2 S
19	Su.	20	15. 52	350. 34	356. 12	1. 6 S	0. 50 N
20	M.	21	16. 35	1. 50	7. 28	2. 46 N	4. 39
21	Tu.	22	17. 18	13. 7	18. 49	6. 30	8. 17
22	W.	23	18. 2	24. 35	30. 25	9. 59	11. 35
23	Th.	24	18. 48	36. 22	42. 26	13. 5	14. 28
24	F.	25	19. 36	48. 37	54. 56	15. 41	16. 44
25	Sa.	26	20. 27	61. 23	67. 59	17. 37	18. 17
26	Su.	27	21. 20	74. 43	81. 35	18. 44	18. 56
27	M.	28	22. 14	88. 34	95. 37	18. 53	18. 35
28	Tu.	29	23. 10	102. 44	109. 54	18. 0	17. 9
29	W.	1	0	117. 5	124. 16	16. 2	14. 40
30	Th.	2	0. 5	131. 26	138. 33	13. 3	11. 14
31	F.	3	1. 0	145. 38	152. 40	9. 15	7. 6

J U L Y 1772.

[79]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Propor. Δ at Noon.	Propor. Δ at Midn.
		M. S.	M. S.	M. S.	M. S.	Lo	Lo
1	W.	15. 52	15. 56	58. 15	58. 31	4900	4880
2	Th.	16. 1	16. 4	58. 45	58. 57	4863	4848
3	F.	16. 7	16. 9	59. 8	59. 15	4834	4824
4	Sa.	16. 11	16. 12	59. 23	59. 27	4816	4811
5	Su.	16. 13	16. 13	59. 30	59. 31	4808	4806
6	M.	16. 13	16. 13	59. 31	59. 30	4806	4808
7	Tu.	16. 12	16. 11	59. 27	59. 23	4811	4816
8	W.	16. 10	16. 8	59. 18	59. 12	4822	4830
9	Th.	16. 6	16. 3	59. 4	58. 56	4839	4849
10	F.	16. 1	15. 58	58. 47	58. 37	4860	4872
11	Sa.	15. 55	15. 52	58. 26	58. 14	4886	4901
12	Su.	15. 48	15. 44	58. 0	57. 46	4918	4936
13	M.	15. 40	15. 36	57. 31	57. 15	4955	4975
14	Tu.	15. 32	15. 27	56. 59	56. 42	4995	5017
15	W.	15. 22	15. 18	56. 25	56. 8	5038	5060
16	Th.	15. 13	15. 9	55. 52	55. 36	5081	5102
17	F.	15. 5	15. 1	55. 21	55. 8	5122	5138
18	Sa.	14. 58	14. 55	54. 55	54. 45	5155	5169
19	Su.	14. 53	14. 51	54. 36	54. 29	5181	5190
20	M.	14. 50	14. 49	54. 25	54. 23	5195	5198
21	Tu.	14. 49	14. 50	54. 23	54. 26	5198	5194
22	W.	14. 51	14. 53	54. 31	54. 39	5187	5177
23	Th.	14. 56	15. 0	54. 49	55. 2	5163	5146
24	F.	15. 4	15. 9	55. 17	55. 35	5127	5103
25	Sa.	15. 14	15. 20	55. 55	56. 16	5077	5050
26	Su.	15. 26	15. 33	56. 39	57. 3	5021	4990
27	M.	15. 40	15. 46	57. 28	57. 52	4958	4928
28	Tu.	15. 53	15. 59	58. 16	58. 38	4898	4871
29	W.	16. 5	16. 10	59. 0	59. 19	4844	4821
30	Th.	16. 14	16. 18	59. 36	59. 51	4800	4782
31	F.	16. 22	16. 23	60. 2	60. 9	4769	4760

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
2	α Spica α	79. 22. 25	77. 37. 55	75. 53. 16	74. 8. 26
3		65. 22. 0	63. 36. 19	61. 50. 31	60. 4. 37
4		51. 13. 47	49. 27. 22	47. 40. 54	45. 54. 23
5		37. 1. 26	35. 14. 47	33. 28. 8	31. 41. 30
6		22. 48. 45	21. 2. 22	19. 16. 4	17. 29. 51
7	α Antares.	54. 36. 16	52. 51. 24	51. 6. 41	49. 22. 7
8		40. 41. 54	38. 58. 30	37. 15. 22	35. 32. 31
9		27. 4. 24			
9	α Aquilæ.	79. 17. 14	77. 41. 49	76. 6. 38	74. 31. 41
10		66. 41. 21	65. 8. 18	63. 35. 43	62. 3. 35
11		54. 31. 2	53. 2. 26	51. 34. 36	50. 7. 32
12	β Capri- corni.	39. 13. 31	37. 31. 52	35. 50. 25	34. 9. 9
13		25. 45. 57	24. 5. 58	22. 26. 11	20. 46. 38
14	α Pegasi.	61. 59. 27	60. 26. 35	58. 54. 7	57. 22. 4
15		49. 48. 35	48. 19. 26	46. 50. 51	45. 22. 53
16		38. 13. 34	36. 50. 12	35. 27. 49	34. 6. 31
17		27. 40. 22			
17	α Arietis.	67. 30. 35	66. 0. 1	64. 29. 43	62. 59. 40
18		55. 33. 15	54. 4. 46	52. 36. 32	51. 8. 35
19		43. 52. 50			
19	α Aldeba- ran.	76. 4. 21	74. 34. 39	73. 5. 5	71. 35. 39
20		64. 9. 54	62. 40. 58	61. 12. 5	59. 43. 15
21		52. 19. 27	50. 50. 43	49. 21. 57	47. 53. 9
22		40. 28. 34	38. 59. 27	37. 30. 13	36. 0. 54
20	The Sun.	115. 22. 2	114. 0. 36	112. 39. 13	111. 17. 52
21		104. 31. 21	103. 10. 2	101. 48. 42	100. 27. 20
22		93. 39. 44	92. 17. 59	90. 56. 7	89. 34. 9
23		82. 42. 23	81. 19. 35	79. 56. 36	78. 33. 26
24		71. 34. 30	70. 10. 1	68. 45. 18	67. 20. 20
25		60. 11. 37	58. 45. 2	57. 18. 9	55. 50. 58
26		48. 30. 11	47. 1. 5	45. 31. 41	44. 1. 57
31	α Spica α	55. 50. 6	54. 1. 7	52. 12. 1	50. 22. 49

JULY 1772.

[81]

Distances of ♄'s Center from Stars, and from ☉ east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
2	Spica π	72. 23. 26	70. 38. 17	68. 52. 59	67. 7. 34
3		58. 18. 37	56. 32. 32	54. 46. 22	53. 0. 7
4		44. 7. 49	42. 21. 15	40. 34. 40	38. 48. 4
5		29. 54. 53	28. 8. 17	26. 21. 43	24. 35. 12
6		15. 43. 44			
6	Antares.	61. 36. 42	59. 51. 28	58. 6. 19	56. 21. 15
7		47. 37. 41	45. 53. 27	44. 9. 24	42. 25. 32
8		33. 50. 0	32. 7. 52	30. 26. 11	28. 45. 0
9	α Aquilæ.	72. 56. 59	71. 22. 34	69. 48. 29	68. 14. 45
10		60. 31. 55	59. 0. 47	57. 30. 15	56. 0. 20
11		48. 41. 16			
11	β Capri- corni.	46. 1. 47	44. 19. 29	42. 37. 19	40. 55. 20
12		32. 28. 5	30. 47. 14	29. 6. 35	27. 26. 10
13		19. 7. 18			
13	α Pegasi.	68. 14. 33	66. 40. 16	65. 6. 19	63. 32. 42
14		55. 50. 26	54. 19. 13	52. 48. 31	51. 18. 18
15		43. 55. 33	42. 28. 54	41. 2. 59	39. 37. 51
16		32. 46. 24	31. 27. 35	30. 10. 13	28. 54. 26
17	α Arietis.	61. 29. 52	60. 0. 20	58. 31. 3	57. 2. 11
18		49. 40. 53	48. 13. 28	46. 46. 19	45. 19. 26
19	Aldeba- ran.	70. 6. 19	68. 37. 5	67. 7. 57	65. 38. 53
20		58. 14. 26	56. 45. 40	55. 16. 55	53. 48. 11
21		46. 24. 20	44. 55. 29	43. 26. 34	41. 57. 36
22		34. 31. 28			
19	The Sun.	120. 48. 20	119. 26. 39	118. 5. 3	116. 43. 31
20		109. 56. 33	108. 35. 15	107. 13. 57	105. 52. 39
21		99. 5. 56	97. 44. 29	96. 22. 58	95. 1. 23
22		88. 12. 4	86. 49. 52	85. 27. 31	84. 5. 1
23		77. 10. 5	75. 46. 31	74. 22. 44	72. 58. 44
24		65. 55. 7	64. 29. 39	63. 3. 55	61. 37. 55
25		54. 23. 28	52. 55. 37	51. 27. 27	49. 58. 59
26		42. 31. 55	41. 1. 33	39. 30. 52	
31	Spica π	48. 33. 31	46. 44. 8	44. 54. 42	43. 5. 14

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	The Sun.	46. 38. 48	48. 17. 27	49. 56. 11	51. 34. 59
5		59. 49. 53	61. 28. 59	63. 8. 6	64. 47. 15
6		73. 3. 3	74. 42. 11	76. 21. 18	78. 0. 22
7		86. 15. 13	87. 54. 4	89. 32. 51	91. 11. 34
8		99. 24. 4	101. 2. 22	102. 40. 34	104. 18. 41
9		112. 27. 43	114. 5. 12	115. 42. 34	117. 19. 49
7	Regulus.	45. 22. 23	47. 8. 6	48. 53. 46	50. 39. 25
8		59. 26. 57	61. 12. 18	62. 57. 36	64. 42. 51
9	Spica π	19. 44. 46	21. 29. 32	23. 14. 13	24. 58. 52
10		33. 40. 42	35. 24. 46	37. 8. 42	38. 52. 30
11		47. 29. 21	49. 12. 19	50. 55. 8	52. 37. 47
12		61. 8. 20	62. 49. 55	64. 31. 20	66. 12. 32
13		74. 35. 33			
13	Antares.	29. 52. 12	31. 28. 36	33. 5. 3	34. 41. 32
14		42. 43. 50	44. 20. 4	45. 56. 9	47. 32. 7
15		55. 29. 37	57. 4. 34	58. 39. 19	60. 13. 52
16		68. 3. 37	69. 36. 57	71. 10. 3	72. 42. 56
17	β Capri- corni.	25. 38. 41	27. 11. 12	28. 43. 30	30. 15. 36
18		37. 53. 5	39. 24. 1	40. 54. 47	42. 25. 23
19	α Aquila.	56. 14. 1	57. 32. 12	58. 50. 37	60. 9. 17
20		66. 45. 21	68. 5. 2	69. 24. 52	70. 44. 49
21		77. 26. 19	78. 46. 55	80. 7. 38	81. 28. 27
22		88. 13. 54			
22	α Pegasi.	40. 27. 49	41. 48. 17	43. 9. 16	44. 30. 47
23		51. 25. 28	52. 49. 41	54. 14. 17	55. 39. 17
24		62. 49. 56	64. 17. 10	65. 44. 45	67. 12. 41
25		74. 37. 35			
25	α Arietis.	31. 6. 48	32. 34. 49	34. 3. 36	35. 33. 7
26		43. 10. 37	44. 43. 52	46. 17. 38	47. 51. 56
27		55. 50. 57			
27	Aldeba- ran.	21. 56. 47	23. 36. 11	25. 16. 0	26. 56. 14
28		35. 23. 23	37. 5. 57	38. 48. 53	40. 34. 10

J U L Y 1772.

[83]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
3	The Sun.	40. 5. 28	41. 43. 36	43. 21. 52	45. 0. 16
4		53. 13. 53	54. 52. 49	56. 31. 48	58. 10. 49
5		66. 26. 25	68. 5. 35	69. 44. 44	71. 23. 54
6		79. 39. 26	81. 18. 27	82. 57. 25	84. 36. 20
7		92. 50. 14	94. 28. 49	96. 7. 18	97. 45. 43
8		105. 56. 43	107. 34. 35	109. 12. 26	110. 50. 8
9		118. 56. 56	120. 33. 56		
7	Regulus.	52. 25. 1	54. 10. 34	55. 56. 5	57. 41. 32
8		66. 28. 2			
8	Spica α	12. 45. 39	14. 30. 25	16. 15. 12	17. 59. 59
9		26. 43. 27	28. 27. 55	30. 12. 17	31. 56. 32
10		40. 36. 11	42. 19. 42	44. 3. 3	45. 46. 16
11		54. 20. 16	56. 2. 33	57. 44. 39	59. 26. 35
12		67. 53. 34	69. 34. 23	71. 14. 59	72. 55. 23
13	Antares.	36. 18. 4	37. 54. 35	39. 31. 3	41. 7. 28
14		49. 7. 58	50. 43. 38	52. 19. 8	53. 54. 28
15		61. 48. 14	63. 22. 24	64. 56. 20	66. 30. 5
16		74. 15. 36			
16	β Capri- corni.	19. 26. 27	20. 59. 50	22. 33. 0	24. 5. 57
17		31. 47. 29	33. 19. 10	34. 50. 40	36. 21. 58
18		43. 55. 48			
18	α Aquilæ.	51. 4. 21	52. 21. 10	53. 38. 32	54. 56. 8
19		61. 28. 10	62. 47. 12	64. 6. 25	65. 25. 48
20		72. 4. 54	73. 25. 5	74. 45. 23	76. 5. 48
21		82. 49. 21	84. 10. 21	85. 31. 26	86. 52. 38
22	α Pegasi.	45. 52. 48	47. 15. 18	48. 38. 15	50. 1. 38
23		57. 4. 40	58. 30. 25	59. 56. 33	61. 23. 4
24		68. 40. 59	70. 9. 37	71. 38. 36	73. 7. 55
25	α Arietis.	37. 3. 21	38. 34. 15	40. 5. 48	41. 37. 55
26		49. 26. 45	51. 2. 5	52. 37. 53	54. 14. 11
27	Aldeba- ran.	28. 36. 52	30. 17. 55	31. 59. 21	33. 41. 10
28		42. 15. 48			

[84]

JULY 1772.

Configurations of the SATELLITES of JUPITER
at $\frac{1}{2}$ an Hour past 11 o' th' Clock in the Evening.

1		.4	2. .1	⊙		.3
2			.2 .4	⊙	1. 3.	
3				3. .1	⊙	.4.2
4	1●		3.	⊙	2.	.4
5		.3	2.	⊙	.1	.4
6	2.0		1. .3	⊙		.4
7				⊙	.1.3 2.	.4
8			.1 2.	⊙		.3 4.
9				⊙	1. 3. 4.	
10	3●			.1	⊙	.4 .2
11	1●		3.	4.	⊙	2.
12	1.0		.3 4. 2.		⊙	
13		4.		.3 1. .2	⊙	
14	4.				⊙	3 6 1 2.
15	.4		1. 2.	⊙		.3
16	.4		.2	⊙	1. 3.	
17	3●	.4		.1	⊙	.2
18			3. .4	⊙	1. 2.	
19	1.0	.3	2.	.4	⊙	
20			.1 .2	⊙		.4
21					⊙	3 0 1 .2 .4
22	2●		1.	⊙		.3 .4
23			.2	⊙	.1 3.	.4
24			.1	⊙	3. .2	.4
25			3.	⊙	1. 2.	.4
26		3.	2.	.1	⊙	.4
27	1●		.3 .2	⊙		.4
28			4.	⊙	.3.1 .2	
29	2●	4.		1.	⊙	.3
30		4.	.2	⊙	.1 3.	
31			.1	⊙	.2 3.	

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
1	Sa.	Lammas-day.	First Quarter — 5. 11. 55 Full Moon — 12. 20. 40 Last Quarter — 21. 0. 47 New Moon — 28. 3. 45
2	Su.	7th Sunday after Trinity.	Other Phenomena. D. 1. ☾ v ☿ 20 ^h . 31'. 4. ☿ ♄ diff. Lat. 39'. ☾ ♄ 18 ^h . 31'. 5. ☿ ♄ diff. Lat. 55'. 6. ☾ ♄ 14 ^h . 35'. ☾ ♄ 10 ^h . 2'. 11. ☾ ♄ 6 ^h . 16'. 15. ☿ ♄ diff. Lat. 2'. 17. ☾ ♄ 0 ^h . 6'. ☾ ♄ 6 ^h . 59'. ☾ ♄ Im. 10 ^h . 56'. * 9 ^h 1/2 N. of ♄'s cent. Em. 11 ^h . 50 ^h 1/2. * 9 ^h 1/2 N. of ♄'s center. 21. ☾ ♄ 1 ad ♄ 10 ^h . 11'. ☾ ♄ 2 ad ♄ 10 ^h . 41'. ☾ ♄ 3 ad ♄ 13 ^h . 17'. 22. ☾ enters ♄ at 4 ^h . 31'. 26. ☾ ♄ 1 ad ♄ 9 ^h . 30'. ☾ ♄ 2 ad ♄ 10 ^h . 24'. ☾ ♄ 3 ad ♄ 14 ^h . 36'. 29. ☾ v ☿ 5 ^h . 35'. 30. ☾ ♄ 1 ^h . 50'.
3	M.		
4	Tu.		
5	W.		
6	Th.	Transfig. of our Lord.	
7	F.	Name of Jesus.	
8	Sa.		
9	Su.	8th Sunday after Trinity.	
10	M.	S. Lawrence.	
11	Tu.	Prs. of Brunswick born.	
12	W.	Pr. of Wales born 1762.	
13	Th.		
14	F.		
15	Sa.		
16	Su.	9th Sunday after Trinity.	
17	M.	[Pr. Frederick born.	
18	Tu.		
19	W.		
20	Th.		
21	F.	Pr. Will. Henry born.	
22	Sa.		
23	Su.	10th Sunday after Trinity.	
24	M.	St. Bartholomew.	
25	Tu.		
26	W.		
27	Th.		
28	F.	S. Augustine. [Bapt.	
29	Sa.	Beheading of St. John	
30	Su.	11th Sunday after Trinity.	
31	M.		

[86]

AUGUST 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sa.	4. 9. 38. 19	8.48.20,5	17. 51. 28	5. 49, 8	
2	Su.	4. 10. 35. 49	8.52.13,0	17. 35. 59	5. 45, 8	4, 0
3	M.	4. 11. 33. 19	8.56. 4,9	17. 20. 13	5. 41, 1	4, 7
4	Tu.	4. 12. 30. 50	8.59.56,1	17. 4. 10	5. 35, 9	5, 2
5	W.	4. 13. 28. 22	9. 3.46,8	16. 47. 50	5. 30, 0	5, 9
6	Th.	4. 14. 25. 54	9. 7.36,8	16. 31. 14	5. 23, 5	6, 5
7	F.	4. 15. 23. 28	9.11.26,4	16. 14. 22	5. 16, 4	7, 1
8	Sa.	4. 16. 21. 2	9.15.15,1	15. 57. 14	5. 8, 6	7, 8
9	Su.	4. 17. 18. 36	9.19. 3,3	15. 39. 52	5. 0, 3	8, 3
10	M.	4. 18. 16. 12	9.22.50,9	15. 22. 14	4. 51, 4	8, 9
11	Tu.	4. 19. 13. 49	9.26.37,9	15. 4. 21	4. 41, 9	9, 5
12	W.	4. 20. 11. 27	9.30.24,5	14. 46. 14	4. 31, 9	10, 0
13	Th.	4. 21. 9. 6	9.34.10,3	14. 27. 53	4. 21, 3	10, 6
14	F.	4. 22. 6. 46	9.37.55,7	14. 9. 18	4. 10, 1	11, 2
15	Sa.	4. 23. 4. 28	9.41.40,6	13. 50. 30	3. 58, 5	11, 6
16	Su.	4. 24. 2. 11	9.45.24,9	13. 31. 28	3. 46, 3	12, 2
17	M.	4. 24. 59. 56	9.49. 8,7	13. 12. 13	3. 33, 6	12, 7
18	Tu.	4. 25. 57. 42	9.52.52,1	12. 52. 46	3. 20, 4	13, 2
19	W.	4. 26. 55. 30	9.56.34,9	12. 33. 6	3. 6, 8	13, 6
20	Th.	4. 27. 53. 20	10. 0.17,4	12. 13. 14	2. 52, 7	14, 1
21	F.	4. 28. 51. 12	10. 3.59,4	11. 53. 10	2. 38, 1	14, 6
22	Sa.	4. 29. 49. 5	10. 7.40,9	11. 32. 55	2. 23, 2	14, 9
23	Su.	5. 0. 47. 1	10.11.22,1	11. 12. 29	2. 7, 9	15, 3
24	M.	5. 1. 44. 58	10.15. 2,8	10. 51. 52	1. 52, 1	15, 8
25	Tu.	5. 2. 42. 58	10.18.43,2	10. 31. 4	1. 35, 9	16, 2
26	W.	5. 3. 40. 58	10.22.23,1	10. 10. 7	1. 19, 3	16, 6
27	Th.	5. 4. 39. 1	10.26. 2,7	9. 48. 59	1. 2, 4	16, 9
28	F.	5. 5. 37. 5	10.29.41,9	9. 27. 43	0. 45, 2	17, 2
29	Sa.	5. 6. 35. 12	10.33.20,9	9. 6. 16	0. 27, 5	17, 7
30	Su.	5. 7. 33. 19	10.36.59,3	8. 44. 42	0. 9, 5	18, 0
31	M.	5. 8. 31. 29	10.40.37,6	8. 22. 58	Sub.8,7	18, 2
						18, 6

AUGUST 1772

[37]

Days	Semidiameter of the Sun.	Time of D ^{ist} passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 49. 1	1. 6. 5	2. 23. 7	0. 006414	6. 23. 29
7	15. 50. 0	1. 5. 9	2. 23. 9	0. 005786	6. 23. 10
13	15. 51. 1	1. 5. 5	2. 24. 3	0. 005304	6. 22. 51
19	15. 52. 2	1. 5. 0	2. 24. 6	0. 004789	6. 22. 32
25	15. 53. 4	1. 4. 7	2. 25. 0	0. 004232	6. 22. 13

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immersion.		II. Satellite. Immersion.		III. Satellite.	
D.	H. M. S.	D.	H. M. S.	D.	H. M. S.
1	17. 4. 1	1	23. 53. 2	7	21. 58. 9 I
3	11* 32. 43	5	13* 11. 58	15	2. 0. 12 I
5	6. 1. 26	9	2. 30. 58	22	9* 35. 20 E
7	0. 30. 14	12	15* 50. 8	29	13. 38. 7 E
8	18. 59. 2	16	5. 9. 25		
10	13* 27. 53		Emergions.		
12	7. 56. 47	19	21. 17. 45		
14	2. 25. 42	23	10* 36. 59		
15	20. 54. 41	26	23. 56. 23	13	7. 2. 30 I
17	15* 23. 42	30	13* 15. 50	30	5. 58. 16 E
	Emergions.				
19	12* 8. 11				
21	6. 37. 14				
23	1. 6. 23				
24	19. 35. 29				
26	14* 4. 41				
28	8* 33. 51				
30	3. 3. 6				
31	21. 32. 18				

[88] AUGUST 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Gr. Elong. 25^d.

1	6. 13. 27	3. 45 N	4. 26. 48	1. 14 N	13. 46 N	1. 19
7	7. 3. 10	1. 32	5. 6. 36	0. 34	9. 38	1. 23
13	7. 20. 54	0. 37 S	5. 15. 26	0. 15 S	5. 30	1. 32
19	8. 7. 37	2. 36	5. 23. 15	1. 11	1. 36	1. 37
25	8. 24. 7	4. 21	5. 29. 53	2. 8	1. 56 S	1. 37

VENUS. Inf. ♂ 12^d. 6^h.

1	10. 2. 39	2. 31 S	4. 26. 31	5. 59 S	7. 3 N	0. 58
7	10. 12. 8	2. 51	4. 23. 36	7. 8	6. 56	0. 22
13	10. 21. 37	3. 7	4. 19. 58	7. 51	7. 19	23. 39
19	11. 1. 7	3. 18	4. 16. 25	8. 11	8. 7	23. 4
25	11. 10. 38	3. 23	4. 13. 43	7. 57	9. 6	22. 33

MARS.

1	1. 4. 10	0. 27 S	2. 10. 57	0. 23 S	21. 44 N	19. 48
7	1. 7. 37	0. 20	2. 14. 56	0. 18	22. 19	19. 42
13	1. 11. 2	0. 14	2. 18. 51	0. 12	22. 48	19. 37
19	1. 14. 24	0. 8	2. 22. 42	0. 6	23. 10	19. 31
25	1. 17. 46	0. 1	2. 26. 30	0. 11	23. 24	19. 25

JUPITER. ♂ 19^d. 20^h.

1	10. 26. 3	0. 58 S	11. 0. 6	1. 12 S	12. 34 S	13. 20
7	10. 26. 35	0. 59	10. 29. 23	1. 13	12. 50	12. 54
13	10. 27. 7	0. 59	10. 28. 37	1. 14	13. 7	12. 28
19	10. 27. 39	1. 0	10. 27. 50	1. 15	13. 25	12. 3
25	10. 28. 11	1. 0	10. 27. 3	1. 15	13. 41	11. 38

SATURN. ♂ 25^d. 11^h.

1	5. 2. 18	1. 38 N	5. 0. 6	1. 29 N	12. 50 N	1. 23
7	5. 2. 31	1. 39	5. 0. 51	1. 29	12. 34	1. 3
13	5. 2. 44	1. 39	5. 1. 36	1. 30	12. 19	0. 43
19	5. 2. 57	1. 40	5. 2. 21	1. 30	12. 3	0. 23
25	5. 3. 9	1. 40	5. 3. 7	1. 30	11. 47	0. 4

AUGUST 1772. [89]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sa.	5. 9. 22. 57	5. 16. 41. 21	3. 27. 27 S	2. 57. 43 S
2	Su.	5. 23. 59. 1	6. 1. 15. 22	2. 25. 3	1. 50. 4
3	M.	6. 8. 29. 38	6. 15. 41. 37	1. 13. 25 S	0. 35. 45 S
4	Tu.	6. 22. 50. 50	6. 29. 57. 2	0. 2. 14 N	0. 39. 58 N
5	W.	7. 7. 0. 8	7. 14. 0. 11	1. 16. 49	1. 52. 16
6	Th.	7. 20. 56. 46	7. 27. 50. 13	2. 25. 43	2. 56. 49
7	F.	8. 4. 40. 38	8. 11. 27. 51	3. 25. 5	3. 50. 15
8	Sa.	8. 18. 12. 1	8. 24. 53. 6	4. 11. 59	4. 30. 6
9	Su.	9. 1. 31. 10	9. 8. 6. 9	4. 44. 21	4. 54. 44
10	M.	9. 14. 38. 10	9. 21. 7. 2	5. 1. 10	5. 3. 39
11	Tu.	9. 27. 32. 48	10. 3. 55. 26	5. 2. 14	4. 57. 4
12	W.	10. 10. 14. 58	10. 16. 31. 19	4. 48. 14	4. 36. 0
13	Th.	10. 22. 44. 35	10. 28. 54. 50	4. 20. 32	4. 2. 5
14	F.	11. 5. 2. 2	11. 11. 6. 29	3. 40. 59	3. 17. 27
15	Sa.	11. 17. 8. 19	11. 23. 7. 51	2. 51. 51	2. 24. 28
16	Su.	11. 29. 5. 15	0. 5. 1. 2	1. 55. 36	1. 25. 33
17	M.	0. 10. 55. 30	0. 16. 49. 7	0. 54. 41 N	0. 23. 14 N
18	Tu.	0. 22. 42. 25	0. 28. 36. 1	0. 8. 28 S	0. 40. 6 S
19	W.	1. 4. 30. 24	1. 10. 26. 14	1. 11. 27	1. 42. 7
20	Th.	1. 16. 24. 13	1. 22. 24. 54	2. 11. 55	2. 40. 28
21	F.	1. 28. 29. 2	2. 4. 37. 16	3. 7. 30	3. 32. 40
22	Sa.	2. 10. 50. 6	2. 17. 8. 14	3. 55. 40	4. 16. 7
23	Su.	2. 23. 32. 9	3. 0. 2. 23	4. 33. 41	4. 48. 4
24	M.	3. 6. 39. 12	3. 13. 22. 54	4. 58. 50	5. 5. 44
25	Tu.	3. 20. 13. 32	3. 27. 11. 15	5. 8. 24	5. 6. 35
26	W.	4. 4. 15. 7	4. 11. 25. 29	5. 0. 7	4. 48. 51
27	Th.	4. 18. 41. 21	4. 26. 2. 2	4. 32. 49	4. 12. 8
28	F.	5. 3. 26. 37	5. 10. 54. 3	3. 47. 0	3. 17. 49
29	Sa.	5. 18. 23. 3	5. 25. 52. 44	2. 45. 4	2. 9. 25
30	Su.	6. 3. 21. 49	6. 10. 49. 20	1. 31. 36	0. 52. 13 S
31	M.	6. 18. 14. 21	6. 25. 36. 10	0. 12. 8 S	0. 27. 53 N

[90]

AUGUST 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clination at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	4	1. 54	159. 37	166. 36	4. 51 N	2. 32 N
2	Su.	5	2. 48	173. 31	180. 25	0. 10 N	2. 11 S
3	M.	6	3. 41	187. 19	194. 14	4. 30 S	6. 44
4	Tu.	7	4. 35	201. 9	208. 6	8. 52	10. 51
5	W.	8	5. 29	215. 5	222. 7	12. 39	14. 16
6	Th.	9	6. 23	229. 10	236. 16	15. 40	16. 50
7	F.	10	7. 18	243. 22	250. 28	17. 44	18. 23
8	Sa.	11	8. 13	257. 34	264. 37	18. 45	18. 52
9	Su.	12	9. 7	271. 36	278. 30	18. 43	18. 19
10	M.	13	9. 59	285. 19	292. 1	17. 40	16. 48
11	Tu.	14	10. 49	298. 36	305. 3	15. 44	14. 29
12	W.	15	11. 37	311. 22	317. 34	13. 4	11. 31
13	Th.	16	12. 23	323. 39	329. 38	9. 51	8. 5
14	F.	17	13. 7	335. 31	341. 19	6. 15	4. 22
15	Sa.	18	13. 51	347. 3	352. 44	2. 27 S	0. 31 S
16	Su.	19	14. 33	358. 24	4. 2	1. 24 N	3. 18 N
17	M.	20	15. 16	9. 41	15. 21	5. 10	6. 58
18	Tu.	21	16. 0	21. 3	26. 49	8. 43	10. 22
19	W.	22	16. 45	32. 39	38. 34	11. 55	13. 21
20	Th.	23	17. 31	44. 35	50. 43	14. 39	15. 48
21	F.	24	18. 20	56. 58	63. 20	16. 48	17. 36
22	Sa.	25	19. 11	69. 50	76. 27	18. 12	18. 36
23	Su.	26	20. 4	83. 12	90. 3	18. 45	18. 40
24	M.	27	20. 59	96. 59	104. 0	18. 19	17. 43
25	Tu.	28	21. 54	111. 5	118. 13	16. 51	15. 44
26	W.	29	22. 50	125. 22	132. 32	14. 21	12. 44
27	Th.	30	23. 46	139. 41	146. 51	10. 55	8. 54
28	F.	1	0	153. 59	161. 7	6. 43	4. 26 N
29	Sa.	2	0. 41	168. 15	175. 22	2. 4 N	0. 20 S
30	Su.	3	1. 37	182. 29	189. 36	2. 44 S	5. 5
31	M.	4	2. 32	196. 45	203. 54	7. 21	9. 29

AUGUST 1772.

[91]

Days of the Month.	Days of the Week.	Semidr. $\nearrow$ at Noon.	Semidr. $\searrow$ at Mid-night.	Hor.Par. $\nearrow$ at Noon.	Hor. Par. $\searrow$ at Midnight.	Propor. Lo-ear at Noon.	Propor Lo-ear at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Si.	16. 25	16. 25	60. 14	60. 16	4754	4752
2	Su.	16. 25	16. 24	60. 14	60. 10	4754	4759
3	M.	16. 22	16. 19	60. 3	59. 54	4768	4778
4	Tu.	16. 16	16. 13	59. 43	59. 30	4792	4808
5	W.	16. 9	16. 5	59. 17	59. 2	4823	4842
6	Th.	16. 1	15. 57	58. 47	58. 32	4860	4878
7	F.	15. 53	15. 48	58. 16	58. 0	4898	4918
8	Sa.	15. 44	15. 40	57. 44	57. 28	4938	4958
9	Su.	15. 35	15. 31	57. 13	56. 57	4977	4998
10	M.	15. 27	15. 23	56. 42	56. 27	5017	5036
11	Tu.	15. 19	15. 15	56. 12	55. 58	5055	5073
12	W.	15. 11	15. 8	55. 44	55. 31	5091	5108
13	Th.	15. 4	15. 1	55. 18	55. 6	5125	5141
14	F.	14. 58	14. 55	54. 55	54. 45	5155	5169
15	Sa.	14. 53	14. 51	54. 36	54. 28	5181	5191
16	Su.	14. 49	14. 48	54. 22	54. 18	5199	5205
17	M.	14. 47	14. 47	54. 15	54. 14	5209	5210
18	Tu.	14. 47	14. 48	54. 16	54. 20	5207	5202
19	W.	14. 50	14. 52	54. 26	54. 34	5194	5183
20	Th.	14. 55	14. 59	54. 45	54. 58	5169	5152
21	F.	15. 3	15. 8	55. 14	55. 33	5130	5106
22	Sa.	15. 14	15. 20	55. 53	56. 16	5080	5050
23	Su.	15. 26	15. 34	56. 40	57. 6	5019	4986
24	M.	15. 41	15. 49	57. 33	58. 1	4952	4917
25	Tu.	15. 56	16. 4	58. 29	58. 56	4882	4849
26	W.	16. 11	16. 17	59. 22	59. 46	4817	4788
27	Th.	16. 23	16. 28	60. 8	60. 27	4761	4739
28	F.	16. 32	16. 35	60. 42	60. 53	4721	4708
29	Sa.	16. 37	16. 38	60. 59	61. 2	4700	4697
30	Su.	16. 37	16. 36	61. 0	60. 54	4699	4707
31	M.	16. 33	16. 29	60. 44	60. 31	4718	4734

[92]

AUGUST 1772.

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica π	41. 15. 41	39. 26. 8	37. 36. 36	35. 47. 4
2		26. 40. 7	24. 50. 56	23. 1. 52	21. 12. 57
3		12. 11. 54			
3	Antares.	58. 6. 19	56. 19. 13	54. 32. 21	52. 45. 42
4		43. 56. 16	42. 11. 17	40. 26. 39	38. 42. 25
5		30. 7. 59			
5	α Aquilæ.	82. 1. 31	80. 25. 27	78. 49. 41	77. 14. 12
6		69. 22. 5	67. 48. 52	66. 16. 7	64. 43. 51
7		57. 10. 24	55. 41. 34	54. 13. 26	52. 46. 3
8	γ Capri- corni.	42. 32. 54	40. 52. 30	39. 12. 19	37. 32. 21
9		29. 15. 35	27. 36. 51	25. 58. 21	24. 26. 2
10	α Pegasi.	65. 25. 37	63. 53. 30	62. 21. 45	60. 50. 19
11		53. 18. 40	51. 49. 34	50. 20. 55	48. 52. 45
12		41. 40. 14	40. 15. 41	38. 51. 54	37. 28. 56
13		30. 49. 37			
13	α Arietis.	71. 17. 34	69. 46. 48	68. 16. 15	66. 45. 55
14		59. 17. 34	57. 48. 33	56. 19. 47	54. 51. 14
15		47. 32. 8	46. 5. 5	44. 38. 20	43. 11. 53
16		36. 4. 47			
16	Aldeba- ran.	67. 50. 51	66. 21. 32	64. 52. 19	62. 23. 11
17		55. 58. 39	54. 29. 55	53. 1. 13	51. 32. 34
18		44. 9. 33	42. 40. 56	41. 12. 19	39. 43. 39
19		32. 19. 47	30. 50. 50	29. 21. 49	27. 52. 41
20	Pollux.	64. 10. 24	62. 42. 41	61. 14. 52	59. 46. 57
21		52. 25. 46			
18	The Sun.			120. 32. 56	119. 11. 42
19		112. 24. 48	111. 3. 12	109. 41. 29	108. 19. 39
20		101. 28. 36	100. 5. 58	98. 43. 9	97. 20. 9
21		90. 22. 8	88. 57. 51	87. 33. 19	86. 8. 32
22		79. 0. 33	77. 34. 4	76. 7. 17	74. 40. 9
23		67. 19. 27	65. 50. 13	64. 20. 36	62. 50. 36
24		55. 14. 49	53. 42. 27	52. 9. 40	50. 36. 29
25		42. 44. 30	41. 8. 54	39. 32. 54	
30	Antares.	63. 11. 38	61. 20. 39	59. 29. 52	57. 39. 14
31		48. 29. 29	46. 40. 21	44. 51. 35	43. 3. 12

AUGUST 1772.

[93]

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica α	33. 57. 34	32. 8. 6	30. 18. 42	28. 29. 22
2		19. 24. 14	17. 35. 44	15. 47. 30	13. 59. 33
3	Antares.	50. 59. 15	49. 13. 4	47. 27. 10	45. 41. 34
4		36. 58. 35	35. 15. 12	33. 32. 17	31. 49. 52
5	z Aquilæ.	75. 39. 3	74. 4. 14	72. 29. 47	70. 55. 45
6		63. 12. 3	61. 40. 45	60. 10. 2	58. 39. 55
7		51. 19. 26			
7	z Capri- corni.	49. 15. 39	47. 35. 24	45. 54. 20	44. 13. 31
8		35. 52. 35	34. 13. 1	32. 33. 40	30. 54. 31
9		22. 41. 56			
9	z Pegasi.	71. 37. 8	70. 3. 48	68. 30. 46	66. 58. 3
10		59. 19. 14	57. 48. 30	56. 18. 10	54. 48. 13
11		47. 25. 6	45. 57. 59	44. 31. 26	43. 5. 30
12		36. 6. 54	34. 45. 51	33. 25. 54	32. 7. 7
13	z Arietis.	65. 15. 48	63. 45. 54	62. 16. 14	60. 46. 47
14		53. 22. 55	51. 54. 50	50. 27. 1	48. 59. 27
15		41. 45. 45	40. 19. 58	38. 54. 32	37. 29. 28
16	Aldeba- ran.	61. 54. 8	60. 25. 11	58. 56. 16	57. 27. 26
17		50. 3. 56	48. 35. 20	47. 6. 44	45. 38. 9
18		38. 14. 58	36. 46. 15	35. 17. 29	33. 48. 40
19		26. 23. 30			
19	Pollux.	70. 0. 26	68. 33. 4	67. 5. 35	65. 38. 3
20		58. 18. 56	56. 50. 50	55. 22. 35	53. 54. 15
18	The Sun.	117. 50. 28	116. 29. 9	115. 7. 46	113. 46. 19
19		106. 57. 43	105. 35. 39	104. 13. 27	102. 51. 6
20		95. 56. 59	94. 33. 36	93. 10. 0	91. 46. 11
21		84. 43. 29	83. 18. 10	81. 52. 35	80. 26. 43
22		73. 12. 42	71. 44. 56	70. 16. 47	68. 48. 19
23		61. 20. 14	59. 49. 28	58. 18. 19	56. 46. 46
24		49. 2. 54	47. 28. 54	45. 54. 30	44. 19. 42
29					
29	Antares.	70. 36. 33	68. 45. 13	66. 53. 55	65. 2. 43
30		55. 48. 47	43. 58. 33	52. 8. 36	50. 18. 54
31		41. 15. 12	39. 27. 36	37. 40. 32	35. 54. 1

[94]

AUGUST 1772.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
2	The Sun.	43. 26. 26	45. 7. 57	46. 49. 26	48. 30. 53
3		56. 56. 50	58. 37. 43	60. 18. 29	61. 59. 7
4		70. 20. 0	71. 59. 39	73. 39. 7	75. 18. 24
5		83. 31. 52	85. 9. 56	87. 47. 48	88. 25. 27
6		96. 30. 31	98. 6. 50	99. 42. 57	101. 18. 49
7		109. 15. 2	110. 49. 36	112. 23. 55	113. 58. 2
6	Spica μ	30. 35. 45	32. 19. 25	34. 2. 53	35. 46. 8
7		44. 19. 26	46. 1. 27	47. 43. 15	49. 24. 50
8		57. 49. 40	59. 29. 59	61. 10. 7	62. 50. 1
9		71. 6. 29			
9	Antares.	26. 34. 17	28. 8. 21	29. 42. 38	31. 17. 5
10		39. 10. 55	40. 45. 42	42. 20. 26	43. 55. 6
11		51. 47. 10	53. 21. 14	54. 55. 11	56. 29. 0
12		64. 16. 0	65. 48. 57	67. 21. 45	68. 54. 24
13	β Capri- corni.	21. 47. 53	23. 20. 33	24. 53. 3	26. 25. 23
14		34. 4. 30	35. 35. 51	37. 7. 3	38. 38. 6
15		46. 11. 12			
15	α Aquilæ.	53. 4. 28	54. 22. 9	55. 40. 7	56. 58. 22
16		63. 33. 4	64. 52. 35	66. 12. 15	67. 32. 3
17		74. 12. 39	75. 33. 1	76. 53. 28	78. 13. 58
18		84. 57. 24			
18	α Pegasi.	37. 16. 44	38. 35. 11	39. 54. 12	41. 13. 47
19		47. 59. 0	49. 21. 18	50. 43. 59	52. 7. 1
20		59. 7. 14	60. 32. 12	61. 57. 29	63. 23. 4
21		70. 35. 33	72. 2. 57	73. 30. 41	74. 58. 42
22		38. 46. 33	40. 16. 5	41. 46. 11	43. 16. 50
23	α Arietis.	50. 58. 2	52. 31. 48	54. 6. 4	55. 40. 49
24	Aldeba- ran.	29. 54. 54	31. 34. 38	33. 14. 48	34. 55. 24
25		43. 24. 56	45. 8. 9	46. 51. 48	48. 35. 52
26		57. 22. 33	59. 9. 8	60. 56. 6	62. 43. 28
27		71. 45. 40			
31	The Sun.	39. 42. 54	41. 26. 25	43. 9. 44	44. 52. 50

AUGUST 1772.

[95]

Distances of ☽'s Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1			38. 21. 54	40. 3. 23	41. 44. 54
2		50. 12. 16	51. 53. 33	53. 34. 44	55. 15. 50
3		63. 39. 37	65. 19. 58	67. 0. 8	68. 40. 9
4	The Sun.	75. 57. 29	78. 36. 23	80. 15. 5	81. 53. 35
5		90. 2. 53	91. 40. 7	93. 17. 9	94. 53. 56
6		102. 54. 29	104. 29. 57	106. 5. 12	107. 40. 14
7		115. 31. 55	117. 5. 35	118. 39. 2	120. 12. 15
5		23. 39. 3	25. 23. 32	27. 7. 48	28. 51. 53
6	Spica ♏	37. 29. 12	39. 12. 4	40. 54. 44	42. 37. 11
7		51. 6. 13	52. 47. 24	54. 28. 22	56. 9. 7
8		64. 29. 42	66. 9. 13	67. 48. 30	69. 27. 36
9		32. 51. 42	34. 25. 26	36. 1. 13	37. 36. 3
10	Antares.	45. 29. 43	47. 4. 14	48. 38. 39	50. 12. 58
11		58. 2. 41	59. 36. 14	61. 9. 38	62. 42. 53
12		70. 26. 53			
12	β Capri-	15. 35. 31	17. 8. 52	18. 42. 2	20. 15. 13
13	corni.	27. 57. 33	29. 29. 32	31. 1. 21	32. 33. 0
14		40. 9. 0	41. 39. 46	43. 10. 23	44. 40. 52
15		58. 16. 52	59. 35. 37	60. 54. 34	62. 13. 43
16	α Aquilæ.	68. 51. 59	70. 12. 1	71. 32. 8	72. 52. 21
17		79. 34. 33	80. 55. 11	82. 15. 53	83. 36. 37
18		42. 33. 53	43. 54. 29	45. 15. 34	46. 37. 5
19	α Pegasi.	53. 30. 24	54. 54. 8	56. 18. 10	57. 42. 33
20		64. 48. 57	66. 15. 9	67. 41. 38	69. 8. 27
21		76. 27. 2			
21		32. 54. 40	34. 21. 40	35. 49. 20	37. 17. 38
22	α Arietis.	44. 48. 3	46. 19. 47	47. 52. 1	49. 24. 46
23		57. 16. 3			
23		23. 20. 22	24. 58. 20	26. 36. 45	28. 15. 36
24	Aldeba-	36. 36. 26	38. 17. 54	39. 59. 49	41. 42. 9
25	ran.	50. 20. 22	52. 5. 18	53. 50. 38	55. 36. 23
26		64. 31. 12	66. 19. 18	68. 7. 45	69. 56. 33
31	The Sun.	46. 35. 43	48. 18. 23	50. 0. 48	51. 42. 58

[96]

AUGUST 1772.

Configurations of the SATELLITES of JUPITER
at 10 o' th' Clock in the Evening.

1	.4	3.	⊙	1. 2.
2	.4	3.	2♂1	⊙
3		.4 .3 .2	⊙	1.
4	1.0		.3	⊙ .2
5			1. ♂	2. .4 .3
6		2.	⊙	.1 .4 3.
7	2.0		1. ♂	3. .4
8			3. ♂	.1 2. .4
9		3.	.1 2. ♂	4.
10		.3 .2	⊙	1. 4.
11			.3.1	⊙ .2 4.
12	1●		⊙	2. 4. 3.
13	4●		2. ♂	.1 .3
14		4. 1.	.2 ♂	3.
15		4.	3. ♂	.1 2.
16	4.	3.	.1 2. ♂	
17	+	.3 .2	⊙	1.
18	.4		.3.1	⊙ .3
19	1●	.4	⊙	2. 3.
20		.4 2.	⊙	.1 .3
21			1. 4. 2. ♂	3.
22			3. ♂	.1.4 .3
23	2●	3. 1.	⊙	.4
24		.3 .2	⊙	1. .4
25			.7.1	⊙ .2 .4
26			⊙	1. 2. 3. 4.
27	1.0		2. ♂	.3 4.
28			.2 1. ♂	3. 4. 1
29	3●		⊙	.1 4. 2
30	2●	3. 1. 4.	⊙	
31		.4 .3 .2	⊙	1.

SEPTEMBER 1772. [97]

			Phases of the Moon.			
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.		D.	M.	H.
			First Quarter —	3.	19.	0
			Full Moon —	11.	11.	54
			Last Quarter —	19.	16.	1
			New Moon —	26.	12.	23
			Other Phenomena.			
1	Tu.	Giles.	1. ☾ ♄ 0 ^h . 56'.			
2	W.	Lond. burnt, 1666, O.S.	2. ♀ Stationary.			
3	Th.		☾ 4 ad ☿ 7 ^h . 47'.			
4	F.		☾ 11 ^h . 45'.			
5	Sa.		☾ 16 ^h . 4'.			
6	Su.	12th Sunday after Trinity.	3. ☿ ♀ II diff. Lat. 59'.			
7	M.	Enurchus.	5. ♀ 11 ^h . 48'.			
8	Tu.	Nativity of V. Mary.	7. ☾ ♄ Im. 13 ^h . 7'.			*
9	W.		9'. N. of ♄'s c. Em. 14 ^h .			
10	Th.		0 ^h . 8' N. of ♄'s cent.			
11	F.		8. ♀ Stationary.			
12	Sa.		9. ♀ ☿ diff. Lat. 55'.			
			☾ 20 ^h . 52'.			
13	Su.	13th Sunday after Trinity.	13. ☾ ♄ 6 ^h . 56'.			
14	M.	Holy Cross.	☾ 13 ^h . 49'.			
15	Tu.		☾ 18 ^h . 34'.			
16	W.		17. ☾ 1 ad ♄ Im. 17 ^h . 44'.			
17	Th.	Lambert.	* 8' N. of ♄'s c. Em. 18 ^h .			
18	F.		48 ^h . 10' N. of ♄'s c.			
19	Sa.		☾ 2 ad ♄ 18 ^h . 5'.			
			☾ 20 ^h . 43'.			
20	Su.	14th Sunday after Trinity.	22. ☉ enters ♈ at 0 ^h . 53'.			
21	M.	St. Matthew.	♀ ♄ diff. Lat. 49'.			
22	Tu.	K. Geo. III. crown'd 1761.	☾ 1 ad ♄ 19 ^h . 52'.			
23	W.		☾ 2 ad ♄ 20 ^h . 47'.			
24	Th.		23. ☾ ☿ 1 ^h . 5'.			
25	F.		☾ 11 ^h . 49'.			
26	Sa.	S. Cyprian.	☾ 14 ^h . 38'.			
			☾ 23 ^h . 1'.			
			☉ eclipsed invisible.			
27	Su.	15th Sunday after Trinity.	26. ♀ ♄ diff. Lat. 24'.			
28	M.		♂ ♄ II diff. Lat. 50'.			
29	Tu.	St. Mich. Pri. Char. Aug.	28. ☾ ♄ 10 ^h . 27'.			
30	W.	S. Jerome. [born.	29. ☾ 4 ad ☿ 16 ^h . 15'.			
			☾ 20 ^h . 7'.			
			30. ☾ 0 ^h . 14'.			

[98] SEPTEMBER 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.			Sun's Right Asc. in Time.		Sun's Declin. North.		Equat. of Time. Sub.		Diff.
		S.	D.	M. S.	H.	M. S.	D.	M. S.	M. S.	S.	
1	Tu.	5.	9.	29. 39	10.	44. 15, 5	8.	1. 7	0. 27, 3	18, 9	
2	W.	5.	10.	27. 52	10.	47. 53, 1	7.	39. 8	0. 46, 2	19, 2	
3	Th.	5.	11.	26. 5	10.	51. 30, 4	7.	17. 3	1. 5, 4	19, 5	
4	F.	5.	12.	24. 20	10.	55. 7, 5	6.	54. 49	1. 24, 9	19, 7	
5	Sa.	5.	13.	22. 37	10.	58. 44, 3	6.	32. 28	1. 44, 5	20, 0	
6	Su.	5.	14.	20. 55	11.	2. 20, 9	6.	10. 2	2. 4, 5	20, 1	
7	M.	5.	15.	19. 14	11.	5. 57, 2	5.	47. 30	2. 24, 6	20, 3	
8	Tu.	5.	16.	17. 35	11.	9. 33, 3	5.	24. 52	2. 44, 9	20, 6	
9	W.	5.	17.	15. 58	11.	13. 9, 3	5.	2. 8	3. 5, 5	20, 7	
10	Th.	5.	18.	14. 22	11.	16. 45, 1	4.	39. 20	3. 26, 2	20, 7	
11	F.	5.	19.	12. 48	11.	20. 20, 9	4.	16. 26	3. 46, 9	20, 9	
12	Sa.	5.	20.	11. 16	11.	23. 56, 5	3.	53. 29	4. 7, 8	21, 0	
13	Su.	5.	21.	9. 45	11.	27. 32, 0	3.	30. 27	4. 28, 8	21, 0	
14	M.	5.	22.	8. 17	11.	31. 7, 5	3.	7. 21	4. 49, 8	21, 1	
15	Tu.	5.	23.	6. 51	11.	34. 42, 9	2.	44. 12	5. 10, 9	21, 1	
16	W.	5.	24.	5. 27	11.	38. 18, 3	2.	20. 58	5. 32, 0	21, 0	
17	Th.	5.	25.	4. 5	11.	41. 53, 8	1.	57. 43	5. 53, 0	20, 9	
18	F.	5.	26.	2. 46	11.	45. 29, 3	1.	34. 24	6. 13, 9	21, 0	
19	Sa.	5.	27.	1. 29	11.	49. 4, 8	1.	11. 4	6. 34, 9	20, 8	
20	Su.	5.	28.	0. 14	11.	52. 40, 5	0.	47. 11	6. 55, 7	20, 7	
21	M.	5.	28.	59. 1	11.	56. 16, 2	0.	24. 17	7. 16, 4	20, 7	
22	Tu.	5.	29.	57. 51	11.	59. 52, 1	0.	0. 51 South.	7. 37, 1	20, 5	
23	W.	6.	0.	56. 43	12.	3. 28, 2	0.	22. 35	7. 57, 6	20, 3	
24	Th.	6.	1.	55. 38	12.	7. 4, 3	0.	46. 2	8. 17, 9	20, 2	
25	F.	6.	2.	54. 35	12.	10. 40, 7	1.	9. 30	8. 38, 1	20, 0	
26	Sa.	6.	3.	53. 33	12.	14. 17, 1	1.	32. 56	8. 58, 1	19, 8	
27	Su.	6.	4.	52. 34	12.	17. 53, 9	1.	56. 23	9. 17, 9	19, 5	
28	M.	6.	5.	51. 37	12.	21. 30, 9	2.	19. 49	9. 37, 4	19, 3	
29	Tu.	6.	6.	50. 43	12.	25. 8, 1	2.	43. 14	9. 56, 7	19, 0	
30	W.	6.	7.	49. 49	12.	28. 45, 6	3.	6. 36	10. 15, 7		

SEPTEMBER 1772. [99]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 55. 1	3. 4. 3	2. 25. 4	0. 003499	6. 21. 51
7	15. 56. 6	1. 4. 1	2. 25. 8	0. 002811	6. 21. 32
13	15. 58. 1	1. 4. 0	2. 26. 3	0. 002103	6. 21. 13
19	15. 59. 7	1. 4. 0	2. 26. 8	0. 001393	6. 20. 54
25	16. 1. 3	1. 4. 1	2. 27. 3	0. 000670	6. 20. 35

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite Emerfions.		II. Satellite Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	16. 1. 34	3	2. 35. 20	5	17. 41. 7 E
4	10*30. 53	6	15. 54. 52	12	21. 44. 34 E
6	5. 0. 11	10	5. 14. 27	20	1. 48. 14 E
7	23. 29. 33	13	18. 34. 0	27	5. 51. 57 E
9	17. 58. 51	17	7*53. 35	IV. Satellite.	
11	12*28. 15	20	21. 13. 7		
13	6. 57. 38	24	10*32. 37	15	19. 42. 18 I
15	1. 27. 4	27	23. 52. 5	16	0. 16. 28 E
16	19. 56. 24				
18	14*25. 50				
20	8*55. 12				
22	3. 24. 41				
23	21. 54. 3				
25	16. 23. 33				
27	10*52. 56				
29	5. 22. 18				

[100] S E P T E M B E R 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Inf. δ 21^d. 6^h.

1	9. 14. 5	5. 57 S	6. 5. 35	3. 11 S	5. 9 S	1. 31
7	10. 2. 46	6. 49	6. 7. 52	3. 52	6. 41	1. 17
13	10. 23. 56	6. 55	6. 6. 40	4. 3	6. 22	0. 50
19	11. 18. 50	5. 52	6. 1. 36	3. 18	3. 40	0. 12
25	0. 18. 41	3. 12	5. 25. 24	1. 32	0. 22	23. 23

V E N U S.

1	11. 21. 44	3. 22 S	4. 12. 15	7. 13 S	10. 12 N	22. 2
7	0. 1. 17	3. 15	4. 12. 31	6. 22	10. 57	21. 45
13	0. 10. 50	3. 2	4. 14. 4	5. 26	11. 25	21. 31
19	0. 20. 24	2. 45	4. 16. 43	4. 29	11. 34	21. 21
25	0. 29. 59	2. 23	4. 20. 16	3. 32	11. 23	21. 15

M A R S.

1	1. 21. 38	0. 7 N	3. 0. 50	0. 6 N	23. 34 N	19. 19
7	1. 24. 54	0. 13	3. 4. 27	0. 13	23. 36	19. 13
13	1. 28. 8	0. 19	3. 7. 59	0. 20	23. 34	19. 7
19	2. 1. 20	0. 25	3. 11. 26	0. 27	23. 26	19. 0
25	2. 4. 31	0. 31	3. 14. 46	0. 35	23. 13	18. 53

J U P I T E R.

1	10. 28. 49	1. 1 S	10. 26. 9	1. 16 S	14. 0 S	11. 9
7	10. 29. 21	1. 1	10. 25. 26	1. 16	14. 15	10. 45
13	10. 29. 53	1. 2	10. 24. 46	1. 16	14. 28	10. 21
19	11. 0. 26	1. 2	10. 24. 11	1. 15	14. 39	9. 57
25	11. 0. 58	1. 3	10. 23. 42	1. 15	14. 49	9. 34

S A T U R N.

1	5. 3. 24	1. 40 N	5. 4. 0	1. 31 N	11. 28 N	23. 38
7	5. 3. 37	1. 41	5. 4. 45	1. 31	11. 11	23. 20
13	5. 3. 50	1. 41	5. 5. 31	1. 32	10. 55	23. 1
19	5. 4. 2	1. 42	5. 6. 15	1. 32	10. 40	22. 42
25	5. 4. 15	1. 42	5. 6. 58	1. 33	10. 24	22. 24

S E P T E M B E R 1772. [101]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	7. 2. 54. 3	7. 10. 7. 36	1. 7. 4 N	1. 44. 57 N
2	W.	7. 17. 16. 29	7. 24. 20. 31	2. 20. 43	2. 53. 56
3	Th.	8. 1. 19. 28	8. 8. 13. 35	3. 24. 7	3. 50. 58
4	F.	8. 15. 2. 47	8. 21. 47. 16	4. 14. 13	4. 33. 40
5	Sa.	8. 28. 27. 5	9. 5. 2. 34	4. 49. 10	5. 0. 38
6	Sa.	9. 11. 33. 55	9. 18. 1. 17	5. 8. 6	5. 11. 30
7	M.	9. 24. 24. 59	10. 0. 45. 7	5. 11. 1	5. 6. 44
8	Tu.	10. 7. 1. 59	10. 13. 15. 52	4. 58. 45	4. 47. 17
9	W.	10. 19. 26. 44	10. 25. 35. 14	32. 29	4. 14. 41
10	Th.	11. 1. 40. 47	11. 7. 44. 15	3. 54. 3	3. 30. 51
11	F.	11. 13. 45. 33	11. 19. 44. 59	3. 5. 26	2. 38. 4
12	Sa.	11. 25. 42. 40	0. 1. 38. 59	2. 9. 1	1. 38. 43
13	Su.	0. 7. 34. 0	0. 13. 28. 10	1. 7. 24	0. 35. 22 N
14	M.	0. 19. 21. 35	0. 25. 14. 50	0. 3. 2 N	0. 29. 22 S
15	Tu.	1. 1. 8. 9	1. 7. 2. 7	1. 1. 29 S	1. 33. 1
16	W.	1. 12. 56. 57	1. 18. 53. 20	2. 3. 40	2. 33. 5
17	Th.	1. 24. 51. 42	2. 0. 52. 38	3. 1. 4	3. 27. 12
18	F.	2. 6. 56. 35	2. 13. 4. 14	3. 51. 16	4. 12. 55
19	Sa.	2. 19. 16. 13	2. 25. 32. 53	4. 31. 55	4. 47. 53
20	Su.	3. 1. 54. 53	3. 8. 22. 46	5. 0. 34	5. 9. 39
21	M.	3. 14. 56. 52	3. 21. 37. 33	5. 14. 51	5. 15. 57
22	Tu.	3. 28. 25. 8	4. 5. 19. 39	5. 12. 41	5. 4. 51
23	W.	4. 12. 21. 10	4. 19. 29. 30	4. 52. 21	4. 35. 9
24	Th.	4. 26. 44. 17	5. 4. 4. 58	4. 13. 21	3. 47. 4
25	F.	5. 11. 30. 52	5. 19. 0. 58	3. 16. 41	2. 42. 36
26	Sa.	5. 26. 34. 15	6. 4. 9. 34	2. 5. 23	1. 25. 52
27	Su.	6. 11. 45. 41	6. 19. 21. 18	0. 44. 38 S	0. 2. 39 S
28	M.	6. 25. 55. 16	7. 4. 26. 24	0. 39. 12 N	1. 20. 10 N
29	Tu.	7. 11. 53. 49	7. 19. 16. 33	1. 59. 26	2. 36. 14
30	W.	7. 26. 33. 57	8. 3. 45. 37	3. 10. 6	3. 40. 28

[102] SEPTEMBER 1772.

Days of the Month	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	5	3. 28	211. 5	218. 17	11. 27 S	13. 13 S
2	W.	6	4. 24	225. 29	232. 42	14. 46	16. 4
3	Th.	7	5. 20	239. 56	247. 7	17. 7	17. 54
4	F.	8	6. 16	254. 16	261. 21	18. 25	18. 40
5	Sa.	9	7. 10	268. 22	275. 18	18. 39	18. 22
6	Su.	10	8. 3	282. 7	288. 48	17. 51	17. 6
7	M.	11	8. 53	295. 23	301. 49	16. 9	15. 1
8	Tu.	12	9. 41	308. 9	314. 21	13. 43	12. 16
9	W.	13	10. 28	320. 26	326. 24	10. 41	9. 0
10	Th.	14	11. 12	332. 18	338. 6	7. 15	5. 25
11	F.	15	11. 56	343. 51	349. 33	3. 32 S	1. 38 S
12	Sa.	16	12. 39	355. 13	0. 52	0. 16 N	2. 10 N
13	Su.	17	13. 22	6. 30	12. 10	4. 2	5. 52
14	M.	18	14. 5	17. 51	23. 34	7. 38	9. 19
15	Tu.	19	14. 50	29. 21	35. 12	10. 55	12. 25
16	W.	20	15. 35	41. 8	47. 9	13. 47	15. 0
17	Th.	21	16. 23	53. 16	59. 28	16. 4	16. 59
18	F.	22	17. 12	65. 47	72. 12	17. 41	18. 13
19	Sa.	23	18. 3	78. 43	85. 19	18. 31	18. 36
20	Su.	24	18. 55	92. 1	98. 47	18. 27	18. 3
21	M.	25	19. 49	105. 37	112. 30	17. 25	16. 32
22	Tu.	26	20. 43	119. 27	126. 25	15. 24	14. 2
23	W.	27	21. 38	133. 25	140. 27	12. 26	10. 38
24	Th.	28	22. 33	147. 31	154. 35	8. 39	6. 30
25	F.	29	23. 29	161. 42	168. 51	4. 13 N	1. 51 N
26	Sa.	1	0	176. 1	183. 15	0. 33 S	2. 58 S
27	Su.	2	0. 25	190. 31	197. 51	5. 20	7. 37
28	M.	3	1. 23	205. 13	212. 38	9. 47	11. 46
29	Tu.	4	2. 21	220. 5	227. 33	13. 32	15. 4
30	W.	5	3. 19	235. 1	242. 29	16. 20	17. 19

SEPTEMBER 1772. [103]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Proport. Log. at Noon.	Proport. Log. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Tu.	16. 25	16. 20	60. 15	59. 56	4753	4776
2	W.	16. 14	16. 9	59. 36	59. 15	4800	4826
3	Th.	16. 3	15. 56	58. 53	58. 30	4853	4881
4	F.	15. 50	15. 44	58. 8	57. 46	4908	4936
5	Sa.	15. 38	15. 33	57. 24	57. 3	4964	4990
6	Su.	15. 28	15. 22	56. 44	56. 25	5014	5038
7	M.	15. 18	15. 13	56. 8	55. 52	5060	5081
8	Tu.	15. 9	15. 5	55. 36	55. 23	5102	5119
9	W.	15. 2	14. 59	55. 10	54. 58	5136	5152
10	Th.	14. 56	14. 53	54. 47	54. 38	5166	5178
11	F.	14. 51	14. 49	54. 30	54. 23	5189	5198
12	Sa.	14. 47	14. 46	54. 17	54. 12	5206	5213
13	Su.	14. 45	14. 45	54. 9	54. 7	5217	5219
14	M.	14. 45	14. 45	54. 7	54. 7	5219	5219
15	Tu.	14. 46	14. 47	54. 10	54. 15	5215	5209
16	W.	14. 49	14. 51	54. 21	54. 29	5201	5190
17	Th.	14. 54	14. 57	54. 40	54. 53	5175	5158
18	F.	15. 1	15. 6	55. 8	55. 26	5138	5115
19	Sa.	15. 12	15. 18	55. 45	56. 7	5090	5062
20	Su.	15. 24	15. 31	56. 31	56. 56	5031	4999
21	M.	15. 38	15. 46	57. 24	57. 52	4964	4928
22	Tu.	15. 54	16. 2	58. 21	58. 50	4892	4856
23	W.	16. 9	16. 17	59. 18	59. 45	4822	4789
24	Th.	16. 24	16. 30	60. 11	60. 34	4758	4730
25	F.	16. 35	16. 40	60. 53	61. 9	4708	4689
26	Sa.	16. 43	16. 45	61. 20	61. 27	4676	4668
27	Su.	16. 45	16. 44	61. 29	61. 25	4665	4670
28	M.	16. 42	16. 39	61. 17	61. 5	4679	4698
29	Tu.	16. 34	16. 29	60. 48	60. 28	4714	4737
30	W.	16. 22	16. 16	60. 5	59. 40	4765	4795

[104] SEPTEMBER 1772.

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	34. 8. 1	32. 22. 40	30. 37. 59	28. 54. 2
2		72. 34. 42	70. 58. 22	69. 22. 36	67. 47. 21
3	α Aquilæ.	60. 0. 8	58. 28. 38	56. 57. 54	55. 27. 58
4		48. 11. 18			
4	γ Capri-	45. 41. 22	43. 59. 58	42. 18. 52	40. 38. 6
5	corni.	32. 18. 55	30. 39. 58	29. 1. 18	27. 22. 55
6		19. 15. 1			
6		68. 17. 2	66. 45. 4	65. 13. 27	63. 42. 9
7	α Pegasi.	56. 11. 17	54. 42. 18	53. 13. 46	51. 45. 42
8		44. 32. 38	43. 7. 41	41. 43. 22	40. 19. 45
9		33. 34. 12	32. 16. 11	30. 59. 25	29. 44. 0
10		62. 33. 49	61. 5. 1	59. 36. 24	58. 7. 58
11	α Arietis.	50. 48. 52	49. 21. 39	47. 54. 41	46. 27. 58
12		39. 18. 25			
12		71. 13. 40	69. 44. 12	68. 14. 51	66. 45. 36
13		59. 20. 21	57. 51. 27	56. 22. 34	54. 53. 46
14	Aldeba-	47. 30. 22	46. 1. 45	44. 33. 8	43. 4. 32
15	ran.	35. 41. 33	34. 12. 54	32. 44. 15	31. 15. 33
16		23. 51. 33	22. 22. 35	20. 53. 35	19. 24. 32
17		11. 58. 43			
17		55. 58. 9	54. 30. 57	53. 3. 42	51. 36. 28
18	Pollux.	44. 19. 58	42. 52. 38	41. 25. 23	39. 58. 11
19		32. 44. 4			
19	Regulus.	67. 30. 47	65. 57. 40	64. 24. 15	62. 50. 33
20		54. 57. 31			
17		120. 9. 37	118. 46. 56	117. 24. 5	116. 1. 5
18		109. 3. 29	107. 39. 22	106. 15. 2	104. 50. 27
19		97. 43. 47	96. 17. 40	94. 51. 15	93. 24. 33
20	The Sun.	86. 6. 15	84. 37. 34	83. 8. 30	81. 39. 5
21		74. 6. 17	72. 34. 33	71. 2. 23	69. 29. 48
22		61. 40. 25	60. 5. 14	58. 29. 37	56. 53. 33
23		48. 46. 29	47. 7. 44	45. 28. 34	43. 48. 57
28	Antares.	39. 58. 13	38. 7. 44	36. 17. 43	34. 28. 14
29		25. 31. 22			
29		77. 24. 58	75. 43. 47	74. 3. 3	72. 22. 48
30	α Aquilæ.	64. 10. 5	62. 33. 26	60. 57. 34	59. 22. 27
O.1		51. 39. 55			

S E P T E M B E R 1772. [105]

Distances of β 's Center from Stars, and from $\odot$ east of her.

Days	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	27. 10. 52			
1		79. 4. 31	77. 26. 25	75. 48. 45	74. 11. 30
2	α Aquilæ.	66. 12. 39	64. 38. 33	63. 5. 6	61. 32. 18
3		53. 58. 48	52. 30. 31	51. 3. 9	49. 36. 44
4	β Capri-	38. 57. 39	37. 17. 31	35. 37. 41	33. 58. 9
5	corni.	25. 44. 48	24. 6. 58	22. 29. 23	20. 52. 4
6		62. 11. 13	60. 40. 39	59. 10. 28	57. 40. 21
7	α Pegasi.	50. 18. 4	48. 50. 54	47. 24. 17	45. 58. 11
8		38. 56. 52	37. 34. 47	36. 13. 36	34. 53. 22
9		28. 30. 3			
9		68. 30. 47	67. 1. 17	65. 31. 57	64. 2. 48
10	α Arietis.	56. 39. 44	55. 11. 42	53. 43. 53	52. 16. 16
11		45. 1. 29	43. 35. 17	42. 9. 22	40. 43. 44
12		65. 16. 27	63. 47. 20	62. 18. 17	60. 49. 17
13	Aldeba- ran.	53. 24. 59	51. 56. 17	50. 27. 37	48. 58. 59
14		41. 35. 56	40. 17. 21	38. 38. 46	37. 10. 10
15		29. 46. 50	28. 18. 8	26. 49. 17	25. 20. 26
16		17. 55. 26	16. 26. 19	14. 57. 9	13. 27. 57
17	Pollux.	50. 9. 11	48. 41. 53	47. 14. 35	45. 47. 17
18		38. 31. 4	37. 4. 2	35. 37. 10	34. 10. 30
19	Regulus.	61. 16. 34	59. 42. 17	58. 7. 40	56. 32. 45
17		114. 37. 56	113. 14. 36	111. 51. 6	110. 27. 23
18		103. 25. 39	102. 0. 35	100. 35. 15	99. 9. 39
19		91. 57. 33	90. 30. 14	89. 2. 34	87. 34. 35
20	The Sun.	80. 9. 18	78. 39. 8	77. 8. 34	75. 37. 37
21		67. 56. 48	66. 23. 22	64. 49. 29	63. 15. 10
22		55. 17. 2	53. 40. 4	52. 2. 39	50. 24. 47
23		42. 8. 55	40. 28. 27	38. 47. 34	
27	Antares.	47. 23. 47	45. 32. 0	43. 40. 25	41. 49. 8
28		32. 39. 21	30. 51. 6	29. 3. 38	27. 17. 7
29	α Aquilæ.	70. 43. 5	69. 3. 54	67. 25. 21	65. 47. 24
30		57. 48. 7	56. 14. 41	54. 42. 8	53. 10. 32

106] SEPTEMBER 1772.

Distances of β 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		53. 24. 53	55. 6. 32	56. 47. 54	58. 28. 59
2		66. 49. 51	68. 29. 5	70. 8. 0	71. 46. 35
3	The Sun.	79. 54. 28	81. 31. 3	83. 07. 19	84. 43. 15
4		92. 38. 08	94. 17. 59	95. 49. 40	97. 19. 2
5		105. 11. 11	106. 32. 44	108. 4. 0	109. 35. 0
6		117. 5. 54	118. 35. 18	120. 54. 27	
4	Spica α	54. 42. 1	56. 23. 20	58. 24. 20	59. 45. 2
15		68. 3. 53	69. 43. 46	71. 23. 23	72. 59. 44
6		36. 14. 46	37. 48. 46	39. 22. 43	40. 56. 36
7	Antares	48. 44. 43	50. 17. 58	51. 51. 5	53. 24. 5
8		61. 6. 57	62. 39. 8	64. 11. 10	65. 43. 5
9		73. 20. 24			
9	β Capri-	18. 30. 27	20. 2. 34	21. 34. 31	23. 6. 10
10	corni.	30. 43. 20	32. 14. 22	33. 45. 16	35. 16. 4
11		42. 48. 17			
11		50. 12. 12	51. 18. 49	52. 25. 50	54. 3. 13
12	α Aquilæ.	60. 34. 57	61. 54. 5	63. 13. 24	64. 32. 54
13		71. 12. 35	72. 32. 54	73. 53. 18	75. 13. 47
14		81. 57. 3	83. 17. 51	84. 38. 41	85. 59. 34
15		44. 56. 28	46. 17. 42	47. 39. 18	49. 1. 15
16	α Pegasi.	55. 55. 33	57. 19. 45	58. 43. 13	60. 7. 16
17		67. 12. 5	68. 37. 43	70. 3. 34	71. 20. 39
18	α Arietis.	35. 19. 7	36. 35. 24	38. 2. 14	39. 29. 36
19		46. 53. 55	48. 24. 9	49. 54. 47	51. 25. 50
20		25. 11. 37	26. 47. 28	28. 23. 43	30. 0. 21
21	Aldeba-	38. 9. 23	39. 48. 24	41. 27. 51	43. 7. 43
22	ran.	51. 33. 35	53. 16. 5	54. 59. 1	56. 42. 24
23		65. 26. 8			
23		25. 2. 43	26. 36. 7	28. 11. 18	29. 48. 5
24	Pollux.	38. 10. 31	39. 53. 58	41. 38. 13	43. 23. 13
25		52. 17. 41	54. 6. 11	55. 55. 7	57. 44. 26
29	The Sun.			38. 33. 49	40. 17. 12
30		48. 48. 44	50. 29. 55	52. 10. 42	53. 51. 5

S E P T E M B E R 1772 [107]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		60. 9. 46	61. 50. 15	63. 30. 26	65. 10. 18
2		73. 24. 51	75. 2. 45	76. 40. 19	78. 17. 34
3	The Sun.	86. 18. 52	87. 54. 8	89. 29. 5	91. 13. 42
4		98. 52. 5	100. 24. 48	101. 57. 14	103. 29. 21
5		111. 5. 43	112. 36. 10	114. 6. 20	115. 36. 15
3		47. 53. 36	49. 36. 10	51. 18. 26	53. 0. 23
4	Spica μ	61. 25. 25	63. 5. 28	64. 45. 15	66. 24. 42
5		74. 37. 48			
5		29. 58. 45	31. 32. 44	33. 6. 44	34. 40. 45
6	Antares.	42. 30. 26	44. 4. 10	45. 37. 47	47. 11. 19
7		54. 56. 56	56. 29. 38	58. 2. 13	59. 34. 39
8		67. 14. 51	68. 46. 28	70. 17. 56	71. 49. 15
9	β Capri-	24. 38. 0	26. 9. 31	27. 40. 56	29. 12. 12
10	corni.	36. 46. 44	38. 17. 18	39. 47. 44	41. 18. 4
11		55. 26. 58	56. 39. 3	57. 57. 24	59. 16. 2
12	α Aquilæ.	65. 52. 35	67. 12. 23	68. 32. 19	69. 52. 23
13		76. 34. 21	77. 54. 57	79. 15. 36	80. 36. 18
14		87. 20. 29			
14		39. 36. 6	40. 55. 24	42. 15. 16	43. 35. 38
15	α Pegasi.	50. 23. 32	51. 46. 6	53. 8. 58	54. 32. 7
16		61. 31. 54	62. 56. 36	64. 21. 31	65. 46. 41
17		72. 55. 58			
17		29. 30. 0	30. 54. 2	32. 18. 25	33. 43. 27
18	α Arietis.	40. 57. 32	42. 25. 56	43. 54. 47	45. 24. 7
19		52. 57. 17			
19		18. 51. 57	20. 26. 18	22. 1. 2	23. 36. 8
20	Aldeba-	31. 37. 22	33. 14. 46	34. 52. 34	36. 30. 86
21	ran.	44. 48. 0	46. 28. 44	48. 9. 55	49. 51. 32
22		58. 26. 14	60. 10. 31	61. 55. 16	63. 40. 28
23		31. 26. 17	33. 5. 43	34. 40. 19	36. 27. 56
24	Pollux.	45. 8. 54	46. 55. 15	48. 42. 10	50. 29. 40
25		59. 34. 7			
29	The Sun.	42. 0. 14	43. 42. 55	45. 25. 13	47. 7. 10
30		55. 31. 5	57. 10. 40	58. 49. 50	60. 28. 35

108] SEPTEMBER 1772.

Configurations of the SATELLITES of JUPITER
at 9 o'clk in the Evening.

1	71.8	4	3.1	1	2		
2	4.10			3	3		
3			2.1	1		3	
4	4		2			3	10
5	20	4		3.1	2		
6			3.4	1	2		
7	40		3.2		1		
8	20		3.1			4	
9				3.1	2		4
10			2.1			3	4
11				2		3	4
12	10				3.2		4
13			3.3		2		4
14		3.2			1.1		4
15	20		1	1	4		
16	30		4		1.2		
17		4		1.2		3	
18	4		2		4		
19					3.2		10
20			3.1	1	2		
21		4	3.2		1		
22		4.3		1.2			
23			4.3		1.2		
24	20			1		3	
25			2		1	3	
26			1		2.3		4
27	10		3		2		4
28		3.2			1		4
29			1	2			4
30			1			4	

OCTOBER 1772. [109]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D.H.M.	
			First Quarter	3. 5. 8
			Full Moon	11. 5. 26
			Last Quarter	19. 5. 18
			New Moon	25. 21. 49
			Other Phenomena.	
			D.	
1	Th.	Remigius.	3. δ β η diff. Lat. 11'.	
2	F.		4. ϵ β ν 18 ^h . 6'.	
3	Sa.		7. ϵ θ α 2 ^h . 55'.	
4	Su.	16th Sunday after Trinity.	10. δ η η diff. Lat. 25'.	
5	M.		ϵ ϵ κ 20 ^h . 9'.	
6	Tu.	Faith.	11. ϵ ζ κ 0 ^h . 53'.	
7	W.		ϵ eclipsed, partly visible.	
8	Th.		14. ϵ ι δ 23 ^h . 49'.	
9	F.	S. Denys. [begin.	15. ϵ ϵ δ 0 ^h . 19'.	
10	Sa.	Oxf. and Camb. Terms	ϵ ϵ δ 2 ^h . 58'.	
11	Su.	17th Sunday after Trinity.	17. ϵ Stationary.	
12	M.		18. ϵ η δ diff. Lat. 2 ^o . 5'.	
13	Tu.	Transl. of K. Edw. Conf.	20. ϵ ι α ϵ 4 ^h . 39'.	
14	W.		ϵ ϵ α 5 ^h . 35'.	
15	Th.		ϵ κ ϵ 10 ^h . 5'.	
16	F.		21. ϵ θ Ω 0 ^h . 5'.	
17	Sa.	Etheldred.	ϵ π Ω 8 ^h . 43'.	
18	Su.	18th Sunday after Trinity.	22. $\odot$ enters η at 8 ^h . 41'.	
19	M.	[St. Luke.	23. ϵ ν Ω 3 ^h . 27'.	
20	Tu.		25. $\odot$ eclipsed, visible.	
21	W.		27. ϵ ϵ α ζ 2 ^h . 55'.	
22	Th.		ϵ θ α 10 ^h . 44'.	
23	F.			
24	Sa.			
		[Accef. Crisp.		
25	Su.	19th Su. af. Tr. K. Geo. III.		
26	M.	K. Geo. III. procl. 1760.		
27	Tu.			
28	W.	St. Simon and St. Jude.		
29	Th.			
30	F.			
31	Sa.			

[170]

OCTOBER 1772

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Th.	6. 8. 48. 58	12. 32. 23. 3	3. 29. 57	10. 34. 5	18. 5
2	F.	6. 9. 48. 8	12. 36. 1, 3	3. 53. 15	10. 53. 30	18. 2
3	Sa.	6. 10. 47. 20	12. 39. 39, 6	4. 16. 30	11. 11. 2	17. 9
4	Su.	6. 11. 46. 34	12. 43. 18, 3	4. 39. 42	11. 29. 1	17. 5
5	M.	6. 12. 45. 50	12. 46. 57, 3	5. 2. 50	11. 46. 6	17. 1
6	Tu.	6. 13. 45. 7	12. 50. 36, 7	5. 25. 55	12. 3. 7	16. 8
7	W.	6. 14. 44. 26	12. 54. 16, 4	5. 48. 55	12. 20. 5	16. 3
8	Th.	6. 15. 43. 47	12. 57. 56, 6	6. 11. 51	12. 36. 8	15. 9
9	F.	6. 16. 43. 10	13. 1. 37, 2	6. 34. 42	12. 52. 7	15. 4
10	Sa.	6. 17. 42. 35	13. 5. 18, 3	6. 57. 27	13. 8. 1	15. 0
11	Su.	6. 18. 42. 2	13. 8. 59, 9	7. 20. 7	13. 23. 1	14. 4
12	M.	6. 19. 41. 30	13. 12. 41, 9	7. 42. 41	13. 37. 5	14. 0
13	Tu.	6. 20. 41. 0	13. 16. 24, 4	8. 5. 8	13. 51. 5	13. 5
14	W.	6. 21. 40. 33	13. 20. 7, 5	8. 27. 28	14. 5. 0	12. 9
15	Th.	6. 22. 40. 8	13. 23. 51, 1	8. 49. 42	14. 17. 9	12. 2
16	F.	6. 23. 39. 45	13. 27. 35, 4	9. 11. 48	14. 30. 1	11. 6
17	Sa.	6. 24. 39. 25	13. 31. 20, 3	9. 33. 46	14. 41. 7	11. 0
18	Su.	6. 25. 39. 7	13. 35. 5, 8	9. 55. 36	14. 52. 7	10. 4
19	M.	6. 26. 38. 51	13. 38. 51, 9	10. 17. 17	15. 3. 1	9. 7
20	Tu.	6. 27. 38. 38	13. 42. 38, 8	10. 38. 50	15. 12. 8	9. 0
21	W.	6. 28. 38. 27	13. 46. 26, 3	11. 0. 13	15. 21. 8	8. 3
22	Th.	6. 29. 38. 19	13. 50. 14, 5	11. 21. 26	15. 30. 1	7. 7
23	F.	7. 0. 38. 12	13. 54. 3, 4	11. 42. 29	15. 37. 8	6. 9
24	Sa.	7. 1. 38. 8	13. 57. 53, 0	12. 3. 22	15. 44. 7	6. 1
25	Su.	7. 2. 38. 6	14. 1. 43, 4	12. 24. 3	15. 50. 8	5. 5
26	M.	7. 3. 38. 6	14. 5. 34, 5	12. 44. 35	15. 56. 3	4. 6
27	Tu.	7. 4. 38. 9	14. 9. 26, 5	13. 4. 51	16. 0. 9	3. 9
28	W.	7. 5. 38. 13	14. 13. 19, 1	13. 24. 57	16. 4. 8	3. 2
29	Th.	7. 6. 38. 16	14. 17. 12, 4	13. 44. 50	16. 8. 0	2. 5
30	F.	7. 7. 38. 25	14. 21. 6, 5	14. 4. 30	16. 10. 5	1. 6
31	Sa.	7. 8. 38. 34	14. 25. 1, 3	14. 23. 56	16. 12. 1	0. 8

OCTOBER 1770

[111]

Days	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 3. 0	1. 4. 3	2. 27. 9	9. 999912	6. 20. 16
7	16. 4. 6	1. 4. 6	2. 28. 5	9. 999141	6. 19. 57
13	16. 6. 3	1. 5. 1	2. 28. 9	9. 998388	6. 19. 38
19	16. 7. 9	1. 5. 6	2. 29. 3	9. 997671	6. 19. 19
25	16. 9. 6	1. 6. 2	2. 29. 8	9. 996981	6. 18. 59

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Emerfions.			II. Satellite. Emerfions.			III. Satellite.		
Days	H. M. S.		D.	H. M. S.		D.	H. M. S.	
2	18. 21. 7		1	13. 11. 29		4	6. 25. 23	I
4	12. 50. 35		5	2. 30. 42		4	9. 55. 33	E
6	7. 20. 0		8	15. 49. 53		11	10. 29. 16	I
8	1. 49. 24		12	5. 8. 56		11	13. 58. 56	E
9	20. 18. 45		15	18. 27. 51		18	14. 32. 46	I
11	14. 48. 6		19	7. 46. 35		18	18. 1. 55	E
13	9. 17. 26		22	21. 5. 12		25	18. 35. 43	I
15	3. 46. 43		26	10. 23. 38		25	22. 4. 20	E
16	22. 15. 59		29	23. 41. 54		IV. Satellite.		
18	16. 45. 13							
20	11. 14. 25					2	14. 5. 3	I
22	5. 43. 35					2	18. 36. 15	E
24	0. 12. 44					19	8. 25. 24	I
25	18. 41. 50					19	12. 53. 42	E
27	13. 10. 55							
29	7. 39. 58							
31	2. 8. 59							

[112] OCTOBER 1772.

Day	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 6^d.

1	1. 23. 40	0. 58 N	5. 23. 8	0. 22 N	3. 4 N	23. 2
7	3. 1. 22	5. 0	5. 25. 47	1. 35	2. 44	22. 58
13	4. 7. 2	6. 55	6. 4. 34	2. 0	0. 0	23. 6
19	5. 7. 27	6. 30	6. 14. 9	1. 52	3. 52 S	23. 18
25	6. 2. 33	4. 47	6. 24. 11	1. 24	8. 5	23. 32

VENUS. Greatest Elong. 23^d.

1	1. 9. 35	1. 57 S	4. 24. 31	2. 39 S	10. 52 N	21. 11
7	1. 19. 12	1. 27	4. 29. 19	1. 49	10. 0	21. 9
13	1. 28. 50	0. 55	5. 4. 35	1. 4	8. 50	21. 8
19	2. 8. 29	0. 23 S	5. 10. 14	0. 23 S	7. 22	21. 7
25	2. 18. 10	0. 12 N	5. 16. 12	0. 13 N	5. 39	21. 7

MARS. $\square$ 19^d 10^h.

1	2. 7. 39	0. 37 N	3. 18. 0	0. 43 N	22. 58 N	18. 45
7	2. 10. 46	0. 42	3. 21. 6	0. 51	22. 38	18. 36
13	2. 13. 51	0. 47	3. 24. 5	0. 59	22. 17	18. 27
19	2. 16. 54	0. 52	3. 26. 54	1. 9	21. 56	18. 17
25	2. 19. 55	0. 58	3. 29. 32	1. 19	21. 34	18. 6

JUPITER.

1	11. 1. 31	1. 3 S	10. 23. 19	1. 14 S	14. 56 S	9. 10
7	11. 2. 3	1. 32	10. 23. 1	1. 14	15. 1	8. 48
13	11. 2. 35	1. 4	10. 22. 52	1. 13	15. 4	8. 26
19	11. 3. 7	1. 4	10. 22. 50	1. 12	15. 4	8. 3
25	11. 3. 40	1. 5	10. 22. 56	1. 11	15. 1	7. 40

SATURN.

1	5. 4. 28	1. 42 N	5. 7. 40	1. 34 N	10. 9 N	22. 4
7	5. 4. 40	1. 43	5. 8. 21	1. 35	9. 56	21. 45
13	5. 4. 53	1. 43	5. 9. 0	1. 36	9. 41	21. 25
19	5. 5. 6	1. 44	5. 9. 37	1. 37	9. 29	21. 5
25	5. 5. 19	1. 44	5. 10. 11	1. 38	9. 17	20. 45

OCTOBER 1772. [113]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Th.	8. 10. 51. 10	8. 17. 50. 25	4. 6. 50 N	4. 29. 26 N
2	F.	8. 24. 43. 19	9. 1. 30. 1	4. 47. 42	5. 1. 35
3	Sa.	9. 8. 10. 42	9. 14. 45. 35	5. 11. 9	5. 16. 30
4	Su.	9. 21. 15. 2	9. 27. 39. 23	5. 17. 41	5. 14. 53
5	M.	10. 3. 59. 3	10. 10. 14. 28	5. 8. 16	4. 58. 3
6	Tu.	10. 16. 26. 0	10. 22. 34. 7	4. 44. 26	4. 27. 42
7	W.	10. 28. 39. 8	11. 4. 41. 33	4. 8. 2	3. 45. 44
8	Th.	11. 10. 41. 48	11. 16. 40. 9	3. 21. 4	2. 54. 21
9	F.	11. 22. 36. 59	11. 28. 32. 37	2. 25. 49	1. 55. 47
10	Sa.	0. 4. 27. 21	0. 10. 21. 27	1. 24. 33	0. 52. 29 N
11	Su.	0. 16. 15. 18	0. 22. 9. 5	0. 19. 53 N	0. 12. 55 S
12	M.	0. 28. 3. 1	1. 3. 57. 28	0. 45. 36 S	1. 17. 51
13	Tu.	1. 9. 52. 41	1. 15. 48. 57	1. 49. 19	2. 19. 40
14	W.	1. 21. 46. 31	1. 27. 45. 49	2. 48. 39	3. 15. 52
15	Th.	2. 3. 47. 9	2. 9. 50. 55	3. 41. 4	4. 3. 59
16	F.	2. 15. 57. 24	2. 22. 7. 5	4. 24. 17	4. 41. 42
17	Sa.	2. 28. 20. 16	3. 4. 37. 31	4. 56. 0	5. 6. 54
18	Su.	3. 10. 59. 12	3. 17. 25. 37	5. 14. 9	5. 17. 36
19	M.	3. 23. 57. 21	4. 0. 34. 36	5. 17. 1	5. 12. 17
20	Tu.	4. 7. 17. 36	4. 14. 6. 44	5. 3. 14	4. 49. 46
21	W.	4. 21. 2. 3	4. 28. 3. 40	4. 31. 55	4. 9. 46
22	Th.	5. 5. 11. 27	5. 12. 25. 15	3. 43. 27	3. 13. 16
23	F.	5. 19. 44. 31	5. 27. 8. 55	2. 39. 32	2. 2. 45
24	Sa.	6. 4. 37. 40	6. 12. 9. 47	1. 23. 29	0. 42. 30 S
25	Su.	6. 19. 44. 19	6. 27. 20. 3	0. 0. 35 S	0. 41. 26 N
26	M.	7. 4. 55. 47	7. 12. 30. 19	1. 22. 42 N	2. 2. 25
27	Tu.	7. 20. 2. 18	7. 27. 30. 46	2. 39. 43	3. 13. 56
28	W.	8. 4. 54. 41	8. 12. 13. 7	3. 44. 33	4. 11. 4
29	Th.	8. 19. 25. 22	8. 26. 31. 7	4. 33. 13	4. 50. 50
30	F.	9. 3. 29. 52	9. 10. 21. 45	5. 3. 45	5. 12. 6
31	Sa.	9. 17. 6. 33	9. 23. 44. 36	5. 15. 57	5. 15. 30

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	M. S.	D. M.	M. S.	D. M.
1	Th.	6	4. 17	249. 53	257. 13	18. 1 S	18. 27 S
2	F.	7	5. 13	264. 27	271. 34	18. 34	18. 26
3	Sa.	8	6. 7	278. 34	285. 25	18. 2	17. 24
4	Su.	9	6. 59	292. 7	298. 40	16. 33	15. 31
5	M.	10	7. 48	305. 4	311. 19	14. 17	12. 54
6	Tu.	11	8. 35	317. 27	323. 27	11. 24	9. 47
7	W.	12	9. 20	329. 21	335. 10	8. 5	6. 18
8	Th.	13	10. 2	340. 55	346. 36	4. 28	2. 36 S
9	F.	14	10. 46	352. 16	357. 54	0. 42 S	1. 11 N
10	Sa.	15	11. 28	3. 32	9. 10	3. 4 N	4. 55
11	Su.	16	12. 12	14. 51	20. 33	6. 42	8. 26
12	M.	17	12. 56	26. 19	32. 9	10. 5	11. 38
13	Tu.	18	13. 41	38. 3	44. 2	13. 4	14. 22
14	W.	19	14. 28	50. 6	56. 15	15. 31	16. 30
15	Th.	20	15. 16	62. 30	68. 50	17. 19	17. 55
16	F.	21	16. 6	75. 14	81. 43	18. 21	18. 33
17	Sa.	22	16. 56	88. 15	94. 51	18. 31	18. 16
18	Su.	23	17. 48	101. 30	108. 11	17. 48	17. 5
19	M.	24	18. 40	114. 54	121. 38	16. 8	14. 58
20	Tu.	25	19. 32	128. 23	135. 9	13. 34	11. 59
21	W.	26	20. 25	141. 57	148. 47	10. 12	8. 15
22	Th.	27	21. 18	155. 39	162. 34	6. 9	3. 56 N
23	F.	28	22. 13	169. 32	176. 34	1. 37 N	0. 45 S
24	Sa.	29	23. 9	183. 42	190. 54	3. 7 S	5. 28
25	Su.	1	0	198. 13	205. 37	7. 44	9. 53
26	M.	2	0. 7	213. 7	220. 41	11. 53	13. 40
27	Tu.	3	1. 6	228. 20	236. 0	15. 12	16. 28
28	W.	4	2. 7	243. 40	251. 19	17. 27	18. 8
29	Th.	5	3. 5	258. 53	266. 20	18. 30	18. 34
30	F.	6	4. 2	273. 40	280. 51	18. 22	17. 52
31	Sa.	7	4. 56	287. 51	294. 41	17. 9	16. 12

OCTOBER 1772. [115]

Days of the Month.	Days of the Week.	Semid. D at Noon.	Semid. D at Mid-night.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Propor. Lo- car. at Noon.	Propor. Lo- car. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	16. 8	16. 1	59. 14	58. 47	4827	4860
2	F.	15. 54	15. 46	58. 19	57. 52	4895	4928
3	Sa.	15. 39	15. 32	57. 26	57. 1	4961	4992
4	Su.	15. 26	15. 20	56. 37	56. 14	5023	5053
5	M.	15. 14	15. 9	55. 54	55. 35	5079	5103
6	Tu.	15. 4	15. 0	55. 18	55. 3	5125	5145
7	W.	14. 57	14. 53	54. 50	54. 39	5162	5177
8	Th.	14. 51	14. 48	54. 29	54. 21	5190	5201
9	F.	14. 47	14. 45	54. 15	54. 10	5209	5215
10	Sa.	14. 45	14. 44	54. 6	54. 4	5221	5223
11	Su.	14. 44	14. 44	54. 3	54. 4	5225	5223
12	M.	14. 44	14. 45	54. 5	54. 9	5221	5217
13	Tu.	14. 46	14. 48	54. 13	54. 19	5211	5203
14	W.	14. 50	14. 53	54. 26	54. 35	5194	5182
15	Th.	14. 55	14. 59	54. 46	54. 58	5167	5152
16	F.	15. 2	15. 7	55. 12	55. 27	5133	5114
17	Sa.	15. 11	15. 17	55. 45	56. 4	5090	5065
18	Su.	15. 22	15. 29	56. 25	56. 48	5038	5009
19	M.	15. 35	15. 42	57. 12	57. 37	4979	4947
20	Tu.	15. 49	15. 56	58. 3	58. 30	4915	4881
21	W.	16. 4	16. 11	58. 57	59. 23	4848	4815
22	Th.	16. 18	16. 24	59. 49	60. 13	4784	4755
23	F.	16. 30	16. 35	60. 34	60. 53	4730	4708
24	Sa.	16. 40	16. 43	61. 8	61. 19	4690	4677
25	Su.	16. 44	16. 45	61. 25	61. 27	4670	4668
26	M.	16. 44	16. 42	61. 24	61. 15	4671	4682
27	Tu.	16. 38	16. 33	61. 2	60. 45	4697	4717
28	W.	16. 28	16. 21	60. 25	60. 1	4741	4770
29	Th.	16. 14	16. 7	59. 34	59. 7	4802	4835
30	F.	15. 59	15. 51	58. 38	58. 10	4871	4906
31	Sa.	15. 43	15. 35	57. 40	57. 12	4943	4979

[116] OCTOBER 1772.

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	β Capri- corni.	49. 52. 21	48. 7. 3	46. 22. 11	44. 37. 44
2		36. 1. 49	34. 19. 52	32. 38. 20	30. 57. 11
3		22. 37. 21			
3	α Pegasi.	71. 27. 40	69. 53. 30	68. 19. 48	66. 46. 32
4		59. 7. 8	57. 36. 39	56. 6. 40	54. 37. 12
5		47. 17. 41	45. 51. 27	44. 25. 54	43. 1. 1
6		36. 7. 54			
6	α Arietis.	77. 26. 44	75. 56. 29	74. 26. 28	72. 56. 38
7		65. 30. 37	64. 2. 0	62. 33. 35	61. 5. 20
8		53. 46. 52	52. 19. 44	50. 52. 49	49. 26. 7
9		42. 15. 55	40. 50. 36	39. 25. 36	38. 0. 57
10		31. 3. 26			
10	Aldeba- ran.	62. 27. 49	60. 58. 59	59. 30. 9	58. 1. 20
11		50. 37. 25	49. 8. 40	47. 39. 54	46. 11. 9
12		38. 47. 16	37. 18. 27	35. 49. 36	34. 20. 44
13		26. 55. 56			
13	Pollux.	70. 34. 59	69. 7. 55	67. 40. 52	66. 13. 48
14		58. 58. 27	57. 31. 21	56. 4. 15	54. 37. 10
15		47. 21. 57			
15	Regulus.	82. 55. 51	81. 25. 27	79. 54. 55	78. 24. 15
16		70. 48. 44	69. 17. 8	67. 45. 22	66. 13. 24
17		58. 30. 44	56. 57. 33	55. 24. 9	53. 50. 30
18		45. 58. 43	44. 23. 36	42. 48. 13	41. 12. 35
19		33. 10. 22	31. 33. 10	29. 55. 44	28. 18. 4
17	The Sun.	116. 12. 50	114. 46. 40	113. 20. 14	111. 53. 34
18		104. 36. 9	103. 7. 51	101. 39. 15	100. 10. 21
19		92. 40. 50	91. 9. 55	89. 38. 38	88. 7. 0
20		80. 23. 18	78. 49. 24	77. 15. 6	75. 40. 24
21		67. 40. 50	66. 3. 40	64. 26. 5	62. 48. 6
22		54. 32. 4	52. 51. 37	51. 10. 47	49. 29. 34
23		40. 57. 58	39. 14. 35		
27	α Aquilæ.	70. 1. 46	68. 20. 26	66. 39. 34	64. 59. 14
28		56. 47. 52	55. 12. 2	53. 37. 8	52. 3. 14
29	β Capri- corni.	41. 18. 54	39. 32. 4	37. 45. 40	35. 59. 44
30		27. 16. 56	25. 33. 44	23. 50. 59	22. 8. 39
31	α Pegasi.	63. 1. 13	61. 26. 58	59. 53. 16	58. 20. 8
N. 1		50. 43. 29			

OCTOBER 1772.

[117]

Distances of γ 's Center from Stars, and from $\odot$ east of her.

Days	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	γ Capricorni.	42. 53. 43	41. 10. 7	39. 26. 56	37. 44. 10
2		29. 16. 27	27. 36. 6	25. 56. 8	24. 16. 33
3	α Pegasi.	65. 13. 45	63. 41. 24	62. 9. 30	60. 38. 5
4		53. 8. 13	51. 39. 44	50. 11. 49	48. 44. 28
5		41. 36. 49	40. 13. 23	38. 50. 42	37. 28. 54
6	α Arietis.	71. 27. 2	69. 57. 38	68. 28. 26	66. 59. 25
7		59. 37. 17	58. 9. 24	56. 41. 42	55. 14. 11
8		47. 59. 37	46. 33. 19	45. 7. 16	43. 41. 28
9		36. 36. 37	35. 12. 41	33. 49. 9	32. 26. 4
10	Aldebaran.	56. 32. 32	55. 3. 44	53. 34. 58	52. 6. 11
11		44. 42. 23	43. 13. 38	41. 44. 51	40. 16. 4
12		32. 51. 50	31. 22. 55	29. 53. 57	28. 24. 58
13	Pollux.	64. 46. 44	63. 19. 40	61. 52. 35	60. 25. 31
14		53. 10. 4	51. 43. 0	50. 15. 57	48. 48. 56
15	Regulus.	76. 53. 27	75. 22. 31	73. 51. 25	72. 20. 9
16		64. 41. 16	63. 8. 57	61. 36. 25	60. 3. 41
17		52. 16. 38	50. 42. 31	49. 8. 10	47. 33. 34
18		39. 36. 41	38. 0. 29	36. 24. 2	34. 47. 20
19		26. 40. 10			
16	The Sun.		120. 29. 57	119. 4. 29	117. 38. 46
17		110. 26. 38	108. 59. 26	107. 31. 57	106. 4. 11
18		98. 41. 8	97. 11. 34	95. 41. 39	94. 11. 25
19		86. 35. 0	85. 2. 39	83. 29. 55	81. 56. 48
20		74. 5. 18	72. 29. 48	70. 53. 53	69. 17. 34
21		61. 9. 43	59. 30. 55	57. 51. 42	56. 12. 5
22		47. 47. 57	46. 5. 59	44. 23. 39	42. 40. 59
27	α Aquilæ.	63. 19. 31	61. 40. 27	60. 2. 9	58. 24. 37
28		50. 30. 22			
28	β Capricorni.	48. 30. 23	46. 41. 55	44. 53. 50	43. 6. 10
29		34. 14. 14	32. 29. 13	30. 44. 40	29. 0. 34
30		20. 26. 45			
30	α Pegasi.	69. 23. 46	67. 47. 18	66. 11. 23	64. 36. 1
31		56. 47. 33	55. 15. 39	53. 44. 19	52. 13. 35

[118]

OCTOBER 1772.

Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	62. 6. 55	63. 44. 49	65. 22. 18	66. 59. 22
2		74. 58. 25	76. 32. 59	78. 7. 10	79. 40. 56
3		87. 24. 0	88. 55. 28	90. 26. 35	91. 57. 21
4		99. 26. 2	100. 54. 47	102. 23. 14	103. 51. 23
5		111. 7. 52	112. 34. 22	114. 0. 37	115. 26. 38
3	Antares.	33. 0. 51	34. 36. 17	36. 11. 37	37. 46. 49
4		45. 40. 30	47. 14. 40	48. 48. 38	50. 22. 24
5		58. 8. 6	59. 40. 36	61. 12. 55	62. 45. 2
6		70. 22. 45			
6	♈ Capri- corni.	15. 30. 17	17. 2. 20	18. 34. 12	20. 5. 52
7		27. 41. 48	29. 12. 32	30. 43. 8	32. 13. 37
8		39. 44. 19	41. 14. 8	42. 43. 52	44. 13. 31
9		51. 40. 38			
9	♏ Aquila.	57. 50. 30	59. 8. 51	60. 27. 28	61. 46. 19
10		68. 23. 45	69. 43. 44	71. 3. 50	72. 24. 5
11		79. 6. 18	80. 27. 49	81. 48. 43	83. 9. 41
12	Fomal- haut.	59. 29. 53	60. 47. 28	62. 5. 21	63. 23. 34
13		69. 58. 45	71. 18. 29	72. 38. 25	73. 58. 33
14		80. 41. 47			
14	♊ Pegasi.	64. 16. 48	65. 41. 57	67. 7. 19	68. 32. 50
15		75. 43. 16	77. 9. 54	78. 36. 43	80. 3. 42
16		87. 21. 13			
16	♈ Aries.	43. 43. 39	45. 11. 59	46. 40. 39	48. 9. 40
17		55. 39. 44	57. 10. 44	58. 42. 4	60. 13. 44
18		67. 56. 57	69. 30. 35	71. 4. 33	72. 38. 50
19	Aldeba- ran.	47. 6. 49	48. 45. 7	50. 23. 45	52. 2. 47
20		60. 23. 26	62. 4. 44	63. 46. 26	65. 28. 32
21		74. 5. 12	75. 49. 46	77. 34. 46	79. 20. 10
22	Pollux.	46. 12. 29	47. 56. 0	49. 40. 7	51. 24. 49
23		60. 16. 20	62. 4. 6	63. 52. 16	65. 40. 51
24		74. 49. 8	76. 39. 41	78. 30. 30	80. 21. 31
29	The Sun.	42. 58. 46	44. 38. 3	46. 10. 55	47. 55. 19
30		56. 0. 32	57. 36. 15	59. 11. 31	60. 46. 20
31		68. 33. 43	70. 5. 53	71. 37. 39	73. 8. 59
N.		80. 39. 43			

OCTOBER 1772. [119]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	68. 36. 0	70. 12. 13	71. 48. 2	73. 23. 26
2		81. 14. 19	82. 47. 18	84. 19. 55	85. 52. 9
3		93. 27. 45	94. 57. 49	96. 27. 33	97. 56. 57
4		105. 19. 14	106. 46. 48	108. 14. 5	109. 41. 7
5		116. 52. 25	118. 17. 58	119. 43. 18	121. 8. 26
3	Antares.	39. 21. 53	40. 56. 48	42. 31. 32	44. 6. 7
4		54. 55. 58	53. 29. 19	55. 2. 27	56. 35. 23
5		64. 16. 58	65. 43. 42	67. 20. 17	68. 51. 37
6	β Capri- corni.	21. 37. 23	23. 8. 43	24. 39. 54	26. 10. 55
7		33. 43. 58	35. 14. 13	36. 44. 21	38. 14. 23
8		45. 43. 5	47. 12. 34	48. 41. 59	50. 11. 20
9	α Aquilæ.	63. 5. 25	64. 24. 44	65. 44. 13	67. 3. 54
10		73. 44. 27	75. 4. 56	76. 25. 31	77. 46. 12
11		84. 30. 41			
11	Fomal- haut.	54. 23. 20	55. 39. 23	56. 55. 50	58. 12. 40
12		64. 42. 5	66. 0. 53	67. 19. 55	68. 39. 13
13		75. 18. 52	76. 39. 22	78. 0. 1	79. 20. 48
14	α Pegasi.	69. 58. 34	71. 24. 28	72. 50. 33	74. 16. 49
15		81. 30. 52	82. 58. 12	84. 25. 43	85. 53. 25
16	α Arietis.	49. 39. 0	51. 8. 41	52. 38. 42	54. 9. 3
17		61. 45. 43	63. 18. 2	64. 50. 41	66. 23. 39
18		74. 13. 27			
18	Aldeba- ran.	40. 37. 5	42. 14. 0	43. 51. 16	45. 28. 52
19		53. 42. 10	55. 21. 55	57. 2. 2	58. 42. 33
20		67. 11. 3	68. 53. 58	70. 37. 18	72. 21. 3
21		81. 6. 0			
21	Pollux.	39. 25. 25	41. 6. 5	42. 47. 30	44. 29. 39
22		53. 10. 8	54. 55. 57	56. 42. 15	58. 29. 3
23		67. 29. 50	69. 19. 11	71. 8. 51	72. 58. 50
24		82. 12. 45			
28	The Sun.			39. 38. 55	41. 19. 3
29		49. 33. 18	51. 10. 47	52. 47. 49	54. 24. 24
30		62. 20. 43	63. 54. 37	65. 28. 5	67. 1. 7
31		74. 39. 55	76. 10. 30	77. 40. 38	79. 10. 22

[120] OCTOBER 1772

Configurations of the SATELLITES of JUPITER
at 8 o' th' Clock in the Evening.

1	2●			1.	⊙		3		
2	4●			.2	⊙		1.		.3
3				.4	⊙		.2		3.
4	3●	4.			⊙	1.	2.		
5	4.		3.	2.	⊙				1.0
6	4.		.3	.2	⊙				
7	.4			.3	⊙		.1	.2	
8		.4		1.	⊙	2.		.3	
9			.4	2.	⊙		1.		.3
10	2.0			.1	⊙		.4		3.
11	3●				⊙		1.	.4	2.
12			3.	2.	⊙				.4
13	1●		.3	.2	⊙				.4
14				.3	⊙		.1	.2	.4
15				1.	⊙		2.	.3	4.
16			2.		⊙		.1	.3	4.
17	2.0			.1	⊙			3.3.	
18					⊙		3.	1.4.	2.
19	4●		3.	1	⊙	2			
20			.3	.2	⊙				1●
21		4.		.3	⊙		.1	.2	
22	4.				⊙		.3		
23	.4			2.	⊙		.1		.3
24	.4			1.	⊙		.2		3.
25		.4			⊙		3.	1.	.2
26	2●		.4	.1	⊙				
27			3.	.2	⊙		1.		4.0
28	1.0			.3	⊙		.2	.4	
29	3.0				⊙		1.	2.	.4
30			2.		⊙		.1	.3	.4
31				1.	⊙		.2		3.

NOVEMBER 1772. [121]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
			First Quarter —	1. 19. 5
			Full Moon —	9. 23. 54
			Last Quarter —	17. 16. 30
			New Moon —	24. 8. 16
			Other Phenomena.	
			D.	
			1. $\alpha \beta \gamma$ 1 ^h . 8'.	
			$\gamma \beta \eta$ diff. Lat. 10'.	
			3. $\alpha \beta \gamma$ 9 ^h . 10'.	
			6. $\alpha \delta \epsilon$ 19 ^h . 35'.	
			7. $h \gamma \Omega$ diff. Lat. 21'.	
			$\alpha \epsilon \delta$ 2 ^h . 28'.	
			$\alpha \zeta \eta$ 7 ^h . 13'.	
			8. $\gamma \eta \theta$ diff. Lat. 3'.	
			11. $\alpha \text{ 1 ad } \delta$ 8 ^h . 42'.	
			$\alpha \text{ 2 ad } \delta$ 8 ^h . 13'.	
			$\alpha \epsilon \delta$ 3 ^h . 49'.	
			16. $\alpha \text{ 1 ad } \alpha \text{ } \S \text{ Im. } 9^h. 20'.$	
			* $0\frac{1}{2}'$. N. of γ 's cent.	
			Em. 10 ^h . 11 $\frac{1}{2}'$. * 2 $\frac{1}{2}'$.	
			S.	
			$\alpha \text{ 2 ad } \alpha \text{ } \S \text{ 12}^h. 4'.$	
			$\alpha \kappa \S$ 16 ^h . 37'.	
			17. $\alpha \theta \Omega$ 7 ^h . 0'.	
			$\alpha \pi \Omega$ 15 ^h . 57'.	
			19. $\alpha \upsilon \Omega$ 12 ^h . 14'.	
			20. $\gamma \delta \eta$ diff. Lat. 12'.	
			21. $\odot$ enters γ at 4 ^h . 49'.	
			22. $\alpha \wedge \eta$ 9 ^h . 0'.	
			28. $\alpha \beta \gamma$ 9 ^h . 58'.	
			30. $\alpha \theta \approx$ 16 ^h . 39'.	
1	Su.	20th Sunday after Trinity.		
2	M.	[All Saints.		
3	Tu.	On mor. of All Souls, 1		
4	W.	[ret.		
5	Th.	Powder Plot, 1605.		
6	F.	Leon. Mich. T. begins.		
7	Sa.	D. of Cumberland born.		
8	Su.	21st Sunday after Trinity.		
9	M.			
10	Tu.			
11	W.	S. Martin.		
12	Th.	On mor. of S. Martin, 2		
13	F.	Britius. [ret.		
14	Sa.			
15	Su.	22d Sunday after Trinity.		
16	M.	[Machutus.		
17	Tu.	Hugh Bp. of Lincoln.		
18	W.	In 8 days of S. Martin, 3		
19	Th.	[ret.		
20	F.	Edmund K. and Martyr.		
21	Sa.			
22	Su.	23d Sunday after Trinity.		
23	M.	S. Clement. [Cecilia.		
24	Tu.			
25	W.	D. of Glo. born. In 15 days		
26	Th.	[of S. Martin, 4 ret.		
27	F.			
28	Sa.	Mich. Term ends.		
29	Su.	Advent Sunday.		
30	M.	St. Andrew. Pri. Dow. of [Wales born, 1719.		

[122] NOVEMBER 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	7. 9. 38. 44	14. 28. 57, 1	14. 43. 7	16. 12, 9	0, 1
2	M.	7. 10. 38. 56	14. 32. 53, 5	15. 2. 5	16. 13, 0	0, 7
3	Tu.	7. 11. 39. 10	14. 36. 50, 8	15. 20. 48	16. 12, 3	1, 6
4	W.	7. 12. 39. 25	14. 40. 48, 9	15. 39. 15	16. 10, 7	2, 3
5	Th.	7. 13. 39. 41	14. 44. 47, 8	15. 57. 27	16. 8, 4	3, 1
6	F.	7. 14. 39. 59	14. 48. 47, 4	16. 15. 23	16. 5, 3	3, 9
7	Sa.	7. 15. 40. 18	14. 52. 48, 0	16. 33. 2	16. 1, 4	4, 8
8	Su.	7. 16. 40. 39	14. 56. 49, 3	16. 50. 24	15. 56, 6	5, 6
9	M.	7. 17. 41. 1	15. 0. 51, 5	17. 7. 29	15. 51, 0	6, 5
10	Tu.	7. 18. 41. 26	15. 4. 54, 5	17. 24. 17	15. 44, 5	7, 3
11	W.	7. 19. 41. 51	15. 8. 58, 4	17. 40. 46	15. 37, 2	8, 2
12	Th.	7. 20. 42. 19	15. 13. 3, 2	17. 56. 38	15. 29, 0	9, 0
13	F.	7. 21. 42. 48	15. 17. 8, 7	18. 12. 50	15. 20, 0	9, 9
14	Sa.	7. 22. 43. 19	15. 21. 15, 2	18. 28. 23	15. 10, 1	10, 7
15	Su.	7. 23. 43. 52	15. 25. 22, 5	18. 43. 37	14. 59, 4	11, 6
16	M.	7. 24. 44. 27	15. 29. 30, 7	18. 58. 31	14. 47, 8	12, 5
17	Tu.	7. 25. 45. 4	15. 33. 39, 7	19. 13. 5	14. 35, 3	13, 3
18	W.	7. 26. 45. 42	15. 37. 49, 7	19. 27. 17	14. 22, 0	14, 1
19	Th.	7. 27. 46. 22	15. 42. 0, 4	19. 41. 9	14. 7, 9	15, 0
20	F.	7. 28. 47. 4	15. 46. 12, 0	19. 54. 40	13. 52, 9	15, 8
21	Sa.	7. 29. 47. 48	15. 50. 24, 4	20. 7. 49	13. 37, 1	16, 7
22	Su.	8. 0. 48. 34	15. 54. 37, 7	20. 20. 35	13. 20, 4	17, 4
23	M.	8. 1. 49. 21	15. 58. 51, 6	20. 32. 59	13. 3, 0	18, 2
24	Tu.	8. 2. 50. 9	16. 3. 6, 5	20. 45. 0	12. 44, 8	19, 0
25	W.	8. 3. 50. 59	16. 7. 22, 1	20. 56. 38	12. 25, 8	19, 7
26	Th.	8. 4. 51. 50	16. 11. 38, 4	21. 7. 52	12. 6, 1	20, 4
27	F.	8. 5. 52. 42	16. 15. 55, 4	21. 18. 42	11. 45, 7	21, 1
28	Sa.	8. 6. 53. 36	16. 20. 13, 1	21. 29. 8	11. 24, 6	21, 8
29	Su.	8. 7. 54. 30	16. 24. 31, 5	21. 39. 9	11. 2, 8	22, 4
30	M.	8. 8. 55. 25	16. 28. 50, 5	21. 48. 46	10. 40, 4	23, 0

NOVEMBER 1772. [123]

Days of the Month.	Semidiameter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 11. 2	1. 6. 9	2. 30. 4	9. 996182	6. 18. 37
7	16. 12. 7	1. 7. 6	2. 30. 8	9. 995530	6. 18. 18
13	16. 14. 0	1. 8. 4	2. 31. 3	9. 994944	6. 17. 59
19	16. 15. 2	1. 9. 0	2. 31. 7	9. 994429	6. 17. 40
25	16. 16. 3	1. 9. 7	2. 32. 1	9. 993970	6. 17. 21

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite Emerfions.		II. Satellite Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	20. 37. 55	2	12. 59. 48	1	22. 38. 6 I
3	15. 6. 52	6	2. 17. 40	2	2. 6. 10 E
5	9*35. 45	9	15. 35. 16	9	2. 39. 50 I
7	4. 4. 36	13	4*52. 45	9	6* 7. 22 E
8	22. 33. 24	16	18. 10. 4	16	6*40. 59 I
10	17. 2. 8	20	7*27. 14	16	10. 7. 54 E
12	11. 30. 53	23	20. 44. 9	23	10. 41. 23 I
14	5*59. 34	27	10. 0. 56	23	14. 7. 40 E
16	0. 28. 12	30	23. 17. 32	30	14. 41. 8 I
17	18. 56. 48			30	18. 6. 48 E
19	13. 25. 23			IV. Satellite.	
21	7*53. 54			5	2. 44. 11 I
23	2. 22. 23			5	7* 9. 11 E
24	20. 50. 48			21	20. 59. 44 I
26	15. 19. 13			22	1. 20. 54 E
28	9. 47. 34				
30	4. 15. 54				

[124] NOVEMBER 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Sup. δ 7^d. 6^h.

1	6. 26. 56	2. 16 N	7. 5. 48	0. 42 N	12. 49 S	23. 48
7	7. 15. 13	0. 4 N	7. 15. 31	0. 1 N	16. 29	0. 0
13	8. 2. 10	1. 59 S	7. 25. 3	0. 38 S	19. 40	0. 13
19	8. 18. 39	3. 48	8. 4. 25	1. 14	22. 16	0. 27
25	9. 5. 26	5. 20	8. 13. 42	1. 45	24. 12	0. 41

VENUS.

1	2. 29. 29	0. 52 N	5. 23. 27	0. 49 N	3. 21 N	21. 8
7	3. 9. 12	1. 25	5. 29. 54	1. 16	1. 11 N	21. 9
13	3. 18. 56	1. 55	6. 6. 31	1. 37	1. 6 S	21. 9
19	3. 28. 40	2. 22	6. 13. 16	1. 54	3. 30	21. 10
25	4. 8. 25	2. 44	6. 20. 9	2. 6	5. 57	21. 10

MARS.

1	2. 23. 24	1. 4 N	4. 2. 23	1. 32 N	21. 9 N	17. 49
7	2. 26. 22	1. 9	4. 4. 34	1. 43	20. 49	17. 34
13	2. 29. 18	1. 13	4. 6. 30	1. 55	20. 32	17. 18
19	3. 2. 12	1. 17	4. 8. 8	2. 8	20. 19	17. 0
25	3. 5. 5	1. 21	4. 9. 27	2. 22	20. 12	16. 40

JUPITER. $\square$ 15^d. 11^h.

1	11. 4. 17	1. 5 S	10. 23. 10	1. 10 S	14. 55 S	7. 14
7	11. 4. 50	1. 6	10. 23. 30	1. 9	14. 47	6. 52
13	11. 5. 22	1. 6	10. 23. 58	1. 8	14. 37	6. 29
19	11. 5. 55	1. 7	10. 24. 31	1. 7	14. 25	6. 6
25	11. 6. 27	1. 7	10. 25. 11	1. 6	14. 11	5. 43

SATURN.

1	5. 5. 33	1. 45 N	5. 10. 48	1. 39 N	9. 4 N	20. 20
7	5. 5. 46	1. 45	5. 11. 17	1. 41	8. 54	19. 58
13	5. 5. 59	1. 45	5. 11. 44	1. 42	8. 45	19. 35
19	5. 6. 12	1. 46	5. 12. 7	1. 44	8. 37	19. 11
25	5. 6. 24	1. 46	5. 12. 26	1. 45	8. 31	18. 47

NOVEMBER 1772. [125]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Su.	10. 0. 16. 7	10. 6. 41. 36	5. 10. 57 N	5. 2. 33 N
2	M.	10. 13. 1. 24	10. 19. 16. 0	4. 50. 33	4. 35. 15
3	Tu.	10. 25. 26. 2	11. 1. 32. 4	4. 16. 54	3. 55. 53
4	W.	11. 7. 34. 41	11. 13. 34. 24	3. 32. 24	3. 6. 45
5	Th.	11. 19. 31. 50	11. 25. 27. 29	2. 39. 15	2. 10. 11
6	F.	0. 1. 21. 57	0. 7. 15. 39	1. 39. 48	1. 8. 28
7	Sa.	0. 13. 9. 6	0. 19. 2. 38	0. 36. 25 N	0. 4. 1 N
8	Su.	0. 24. 56. 41	1. 0. 51. 36	0. 28. 27 S	1. 0. 41 S
9	M.	1. 6. 47. 40	1. 12. 45. 5	1. 32. 17	2. 2. 59
10	Tu.	1. 18. 44. 9	1. 24. 45. 6	2. 32. 27	3. 0. 20
11	W.	2. 0. 48. 4	2. 6. 53. 21	3. 26. 18	3. 50. 5
12	Th.	2. 13. 0. 56	2. 19. 11. 8	4. 11. 21	4. 29. 50
13	F.	2. 25. 24. 2	3. 1. 39. 51	4. 45. 13	4. 57. 19
14	Sa.	3. 7. 58. 44	3. 14. 20. 55	5. 5. 54	5. 10. 47
15	Su.	3. 20. 46. 29	3. 27. 15. 46	5. 11. 49	5. 8. 54
16	M.	4. 3. 48. 51	4. 10. 26. 3	5. 1. 56	4. 50. 53
17	Tu.	4. 17. 7. 30	4. 23. 53. 26	4. 35. 47	4. 16. 39
18	W.	5. 0. 43. 57	5. 7. 39. 13	3. 53. 43	3. 27. 5
19	Th.	5. 14. 39. 17	5. 21. 44. 7	2. 57. 4	2. 24. 1
20	F.	5. 28. 53. 42	6. 6. 7. 39	1. 48. 23	1. 10. 40 S
21	Sa.	6. 13. 25. 46	6. 20. 47. 30	0. 31. 27 S	0. 8. 34 N
22	Su.	6. 28. 12. 13	7. 5. 39. 15	0. 48. 41 N	1. 28. 8
23	M.	7. 13. 7. 31	7. 20. 36. 42	6. 6	2. 41. 56
24	Tu.	7. 28. 3. 46	8. 5. 29. 37	3. 14. 51	3. 44. 16
25	W.	8. 12. 52. 27	8. 20. 11. 18	4. 9. 43	4. 30. 45
26	Th.	8. 27. 25. 9	9. 4. 33. 19	4. 47. 14	4. 58. 58
27	F.	9. 11. 35. 19	9. 18. 30. 36	5. 5. 57	5. 8. 20
28	Sa.	9. 25. 18. 57	10. 2. 0. 29	5. 6. 17	5. 0. 2
29	Su.	10. 8. 35. 12	10. 15. 3. 18	4. 49. 54	4. 36. 10
30	M.	10. 21. 25. 20	10. 27. 41. 40	4. 19. 14	3. 59. 22

[126] NOVEMBER 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Su.	8	5. 47	301. 19	307. 47	15. 3 S	13. 44 S
2	M.	9	6. 35	314. 5	320. 14	12. 17	10. 42
3	Tu.	10	7. 21	326. 15	332. 9	9. 1	7. 16
4	W.	11	8. 5	337. 57	343. 40	5. 27	3. 36 S
5	Th.	12	8. 47	349. 20	354. 58	1. 43 S	0. 11 N
6	F.	13	9. 30	0. 35	6. 13	2. 4 N	3. 56
7	Sa.	14	10. 12	11. 52	17. 33	5. 46	7. 32
8	Su.	15	10. 55	23. 17	29. 5	9. 14	10. 50
9	M.	16	11. 40	34. 58	40. 56	12. 21	13. 44
10	Tu.	17	12. 26	47. 0	53. 9	14. 59	16. 4
11	W.	18	13. 15	59. 24	65. 44	16. 58	17. 42
12	Th.	19	14. 4	72. 8	78. 37	18. 14	18. 33
13	F.	20	14. 53	85. 10	91. 45	18. 38	18. 30
14	Sa.	21	15. 44	98. 22	105. 0	18. 8	17. 32
15	Su.	22	16. 35	111. 39	118. 17	16. 43	15. 41
16	M.	23	17. 25	124. 55	131. 33	14. 26	12. 58
17	Tu.	24	18. 16	138. 10	144. 47	11. 20	9. 32
18	W.	25	19. 7	151. 24	158. 3	7. 35	5. 30
19	Th.	26	19. 58	164. 44	171. 28	3. 20 N	1. 5 N
20	F.	27	20. 51	178. 16	185. 9	1. 13 S	3. 31 S
21	Sa.	28	21. 46	192. 9	199. 15	5. 47	8. 0
22	Su.	29	22. 43	206. 29	213. 51	10. 5	12. 2
23	M.	30	23. 42	221. 19	228. 54	13. 47	15. 19
24	Tu.	1	0	236. 33	244. 16	16. 35	17. 34
25	W.	2	0. 42	251. 59	259. 40	18. 14	18. 36
26	Th.	3	1. 41	267. 17	274. 47	18. 39	18. 24
27	F.	4	2. 38	282. 8	289. 19	17. 53	17. 6
28	Sa.	5	3. 32	296. 19	303. 7	16. 5	14. 52
29	Su.	6	4. 23	309. 43	316. 9	13. 28	11. 56
30	M.	7	5. 10	322. 24	328. 30	10. 17	8. 32

NOVEMBER 1772. [127]

Days of the Month.	Days of the Week.	Semidr. γ at Noon.	Semidr. γ at Mid-night.	Hor. Par. γ at Noon.	Hor. Par. γ at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Su.	15. 28	15. 21	56. 46	56. 21	5012	5044
2	M.	15. 15	15. 9	55. 58	55. 37	5073	5100
3	Tu.	15. 4	15. 0	55. 18	55. 2	5125	5146
4	W.	14. 56	14. 52	54. 47	54. 35	5166	5182
5	Th.	14. 50	14. 48	54. 25	54. 18	5195	5205
6	F.	14. 46	14. 45	54. 12	54. 9	5213	5217
7	Sa.	14. 45	14. 45	54. 7	54. 7	5219	5219
8	Su.	14. 45	14. 46	54. 8	54. 12	5218	5213
9	M.	14. 47	14. 49	54. 16	54. 22	5207	5199
10	Tu.	14. 50	14. 53	54. 28	54. 36	5191	5181
11	W.	14. 55	14. 58	54. 45	54. 56	5169	5154
12	Th.	15. 1	15. 4	55. 7	55. 19	5140	5124
13	F.	15. 8	15. 12	55. 32	55. 47	5107	5087
14	Sa.	15. 16	15. 21	56. 2	56. 18	5068	5048
15	Su.	15. 25	15. 30	56. 36	56. 55	5025	5000
16	M.	15. 36	15. 41	57. 14	57. 34	4976	4951
17	Tu.	15. 47	15. 53	57. 55	58. 17	4924	4897
18	W.	15. 59	16. 5	58. 38	59. 0	4871	4844
19	Th.	16. 10	16. 16	59. 21	59. 41	4819	4794
20	F.	16. 20	16. 26	60. 0	60. 17	4771	4751
21	Sa.	16. 29	16. 33	60. 31	60. 43	4734	4719
22	Su.	16. 35	16. 36	60. 51	60. 55	4710	4705
23	M.	16. 36	16. 35	60. 56	60. 52	4704	4709
24	Tu.	16. 33	16. 30	60. 44	60. 32	4718	4733
25	W.	16. 26	16. 20	60. 17	59. 57	4751	4775
26	Th.	16. 14	16. 8	59. 35	59. 10	4801	4832
27	F.	16. 9	15. 53	58. 44	58. 18	4864	4896
28	Sa.	15. 45	15. 38	57. 50	57. 23	4931	4965
29	Su.	15. 31	15. 24	56. 57	56. 31	4998	5031
30	M.	15. 17	15. 12	56. 7	55. 46	5062	5089

[128] NOVEMBER 1772.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Pegasi.	50. 43. 30	49. 14. 6	47. 45. 21	46. 17. 16
2		39. 8. 30	37. 45. 24	36. 23. 18	35. 2. 14
3	α Arietis.	68. 39. 32	67. 9. 51	65. 40. 26	64. 11. 16
4		56. 49. 8	55. 21. 26	53. 53. 59	52. 26. 47
5		45. 14. 21	43. 48. 37	42. 23. 10	40. 58. 1
6		33. 57. 9	32. 34. 13	31. 11. 47	29. 49. 52
7	Aldebaran.	53. 44. 21	52. 15. 41	50. 47. 0	49. 18. 18
8		41. 54. 21	40. 25. 26	38. 56. 28	37. 27. 27
9		30. 1. 31	28. 32. 9	27. 2. 43	25. 33. 13
10		18. 4. 52			
10	Pollux.	61. 55. 51	60. 28. 9	59. 0. 25	57. 32. 40
11		50. 13. 51	48. 46. 6	47. 18. 24	45. 50. 46
12		38. 34. 11			
12	Regulus.	73. 44. 22	72. 12. 31	70. 40. 33	69. 8. 24
13		61. 25. 35	59. 52. 34	58. 19. 24	56. 46. 4
14		48. 57. 1	47. 22. 42	45. 48. 13	44. 13. 33
15		36. 17. 49	34. 42. 9	33. 6. 20	31. 30. 23
16		23. 29. 2			
16	Spica α	76. 44. 2	75. 5. 32	73. 26. 46	71. 47. 45
17		63. 28. 26	61. 47. 41	60. 6. 39	58. 25. 18
18		49. 53. 59			
15	The Sun.		121. 19. 22	119. 50. 15	118. 20. 55
16		110. 50. 33	109. 19. 41	107. 48. 33	106. 17. 9
17		98. 35. 54	97. 2. 46	95. 29. 20	93. 55. 36
18		86. 2. 19	84. 26. 43	82. 50. 48	81. 14. 33
19		73. 8. 28	71. 30. 17	69. 51. 48	68. 13. 0
20		59. 54. 23	58. 13. 47	56. 32. 54	54. 51. 45
21		46. 22. 12	44. 39. 36	42. 56. 49	41. 13. 51
26	α Capricorni.	33. 20. 24	31. 33. 9	29. 46. 16	27. 59. 47
27		19. 13. 19	17. 29. 17	15. 45. 41	14. 2. 32
28	α Pegasi.	55. 22. 19	53. 48. 18	52. 14. 58	50. 42. 20
29		43. 10. 36	41. 42. 48	40. 15. 57	38. 50. 4
30	α Arietis.	72. 36. 12	71. 3. 48	69. 31. 45	68. 0. 3
D.1		60. 26. 43			

NOVEMBER 1772. [129]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Pegasi.	44. 49. 54	43. 23. 18	41. 57. 29	40. 32. 32
2		33. 42. 15			
2	α Arietis.	74. 40. 59	73. 10. 12	71. 39. 42	70. 9. 29
3		62. 42. 21	61. 13. 41	59. 45. 15	58. 17. 4
4		50. 59. 49	49. 33. 5	48. 6. 35	46. 40. 20
5		39. 33. 10	38. 8. 36	36. 44. 22	35. 20. 32
6		28. 28. 32			
6	Aldebaran.	59. 39. 0	58. 10. 21	56. 41. 41	55. 13. 1
7		47. 49. 35	46. 20. 50	44. 52. 3	43. 23. 13
8		35. 58. 23	34. 29. 15	33. 0. 4	31. 30. 49
9		24. 3. 40	22. 34. 3	21. 4. 23	19. 34. 39
10	Pollux.	56. 4. 54	54. 37. 8	53. 9. 22	51. 41. 36
11		44. 23. 12	42. 55. 44	41. 28. 25	40. 1. 14
12	Regulus.	67. 36. 7	66. 3. 42	64. 31. 9	62. 58. 26
13		55. 12. 35	53. 38. 56	52. 5. 8	50. 31. 9
14		42. 38. 44	41. 3. 45	39. 28. 36	37. 53. 18
15		29. 54. 19	28. 18. 8	26. 41. 51	25. 5. 29
16	Spica μ	70. 8. 27	68. 28. 52	66. 49. 1	65. 8. 52
17		56. 43. 39	55. 1. 42	53. 19. 26	51. 36. 52
15	The Sun.	116. 51. 20	115. 21. 31	113. 51. 27	112. 21. 8
16		104. 45. 28	103. 13. 31	101. 41. 16	100. 8. 44
17		92. 21. 34	90. 47. 14	89. 12. 34	87. 37. 36
18		79. 37. 59	78. 1. 5	76. 23. 52	74. 45. 19
19		66. 33. 53	64. 54. 27	63. 14. 44	61. 34. 43
20		53. 10. 21	51. 28. 40	49. 46. 44	48. 4. 35
21		39. 30. 43			
25	β Capricorni.	40. 33. 6	38. 44. 23	36. 56. 1	35. 8. 1
26		26. 13. 41	24. 27. 58	22. 42. 40	20. 57. 47
27		12. 19. 51			
27	α Pegasi.	61. 44. 36	60. 8. 9	58. 32. 16	56. 56. 59
28		49. 10. 25	47. 39. 14	46. 8. 51	44. 39. 18
29		37. 25. 12			
29	α Arietis.	78. 49. 30	77. 15. 37	75. 42. 6	74. 8. 58
30		66. 28. 43	64. 57. 43	63. 27. 4	61. 56. 45

[130] NOVEMBER 1772.

Distances of Moon's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	80. 39. 42	82. 8. 43	83. 37. 21	85. 5. 38
2		92. 21. 57	93. 48. 14	95. 14. 15	96. 39. 57
3		103. 44. 31	105. 8. 41	106. 32. 38	107. 56. 23
4		114. 52. 14	116. 14. 52	117. 37. 21	118. 59. 41
2	♄ Capri- corni.	12. 6. 29	13. 40. 14	15. 13. 43	16. 46. 56
3		24. 29. 7	26. 0. 50	27. 32. 21	29. 3. 39
4		36. 37. 17	38. 7. 29	39. 37. 33	41. 7. 28
5		48. 35. 16			
5	♈ Aquilæ	55. 9. 35	56. 27. 13	57. 45. 8	59. 3. 18
6		65. 37. 37	66. 57. 5	68. 16. 42	69. 36. 29
7		76. 17. 30	77. 38. 2	78. 58. 40	80. 19. 24
8		87. 4. 24			
8	♋ Fomal- haut.	56. 47. 49	58. 4. 48	59. 22. 10	60. 39. 55
9		67. 13. 49	68. 33. 28	69. 53. 21	71. 13. 30
10		77. 57. 36			
10	♊ Pegasi.	61. 23. 17	62. 48. 35	64. 14. 5	65. 39. 48
11		72. 51. 25	74. 18. 20	75. 45. 25	77. 12. 40
12		84. 31. 21			
12	♈ Arietis.	40. 53. 44	42. 21. 52	43. 50. 20	45. 19. 8
13		52. 47. 52	54. 18. 28	55. 49. 21	57. 20. 30
14		65. 0. 2			
14	♌ Aldeba- ran.	31. 13. 15	32. 47. 58	34. 22. 54	35. 58. 4
15		43. 57. 3	45. 33. 32	47. 10. 16	48. 47. 15
16		56. 55. 48	58. 34. 18	60. 13. 5	61. 52. 8
17		70. 11. 38	71. 52. 25	73. 33. 30	75. 14. 54
18	♋ Pollux.	41. 55. 22	43. 33. 50	45. 12. 53	46. 52. 32
19		55. 18. 34	57. 1. 12	58. 44. 17	60. 27. 47
20	♈ Regulus.	32. 17. 36	34. 4. 52	35. 52. 32	37. 40. 34
21		46. 45. 47	48. 35. 42	50. 25. 52	52. 16. 17
22		61. 31. 27	63. 23. 1	65. 14. 42	67. 6. 30
23		76. 26. 30			
27	The Sun.	36. 1. 27	37. 37. 22	39. 12. 52	40. 47. 58
28		48. 37. 25	50. 10. 6	51. 42. 22	53. 14. 14
29		60. 47. 32	62. 16. 59	63. 46. 4	65. 14. 47
30		72. 32. 59	73. 59. 36	75. 25. 53	76. 51. 52
D. 1		83. 57. 13			

NOVEMBER 1772. [131]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	86. 33. 34	88. 1. 9	89. 28. 25	90. 55. 20
2		98. 5. 23	99. 30. 33	100. 55. 27	102. 20. 7
3		109. 19. 56	110. 43. 17	112. 6. 27	113. 29. 26
4		120. 21. 52			
2	β Capri- corni.	18. 19. 52	19. 52. 32	21. 24. 58	22. 57. 10
3		30. 34. 44	32. 5. 38	33. 36. 22	35. 6. 55
4		42. 37. 15	44. 6. 55	45. 36. 28	47. 5. 55
5	α Aquila.	60. 21. 43	61. 40. 22	62. 59. 15	64. 18. 20
6		70. 56. 26	72. 16. 31	73. 36. 43	74. 57. 3
7		81. 40. 14	83. 1. 9	84. 22. 9	85. 43. 14
8	Fomal- haut.	61. 58. 3	63. 16. 32	64. 35. 19	65. 54. 25
9		72. 33. 53	73. 54. 29	75. 15. 19	76. 36. 21
10	α Pegasi.	67. 5. 44	68. 31. 52	69. 58. 11	71. 24. 42
11		78. 40. 6	80. 7. 41	81. 35. 26	83. 3. 19
12	α Arietis.	46. 48. 16	48. 17. 43	49. 47. 28	51. 17. 31
13		58. 51. 54	60. 23. 33	61. 55. 28	63. 27. 38
14	Aldeba- ran.	37. 33. 27	39. 9. 1	40. 44. 48	42. 20. 49
15		50. 24. 28	52. 1. 55	53. 39. 37	55. 17. 35
16		63. 31. 28	65. 11. 4	66. 50. 58	68. 31. 9
17		76. 56. 37			
17	Pollux.	35. 28. 14	37. 3. 57	38. 40. 24	40. 17. 33
18		48. 32. 45	50. 13. 28	51. 54. 40	53. 36. 22
19		62. 11. 42			
19	Regulus.	25. 12. 53	26. 58. 22	28. 44. 20	30. 30. 45
20		39. 28. 58	41. 17. 42	43. 6. 46	44. 56. 8
21		54. 6. 56	55. 57. 47	57. 48. 49	59. 40. 3
22		68. 58. 24	70. 50. 22	72. 42. 23	74. 34. 27
27	The Sun.	42. 22. 40	43. 56. 58	45. 30. 51	47. 4. 20
28		54. 45. 42	56. 16. 45	57. 47. 25	59. 17. 40
29		66. 43. 7	68. 11. 6	69. 38. 44	71. 6. 2
30		78. 17. 31	79. 42. 52	81. 7. 56	82. 32. 42

[132] NOVEMBER 1772.

Configurations of the SATELLITES of JUPITER
at 7 o' th' Clock in the Evening.

1		⊙	.1 3.	.2		4.
2	2●	⊙	.1 3.			4.
3		⊙	.1 3.	.2	4.	
4		⊙	.1 3.	.2		4.
5	1● 4●	⊙	.1 3.	.2		3.0
6		⊙	.1 3.	.2		3.
7	4.	⊙	.1 3.	.2		3.
8	4.	⊙	.1 3.	.2	3	
9	.4	⊙	.1 3.	.2		
10	.4	⊙	.1 3.	.2		
11	.4 .3	⊙	.1 3.	.2		2.0
12		⊙	.1 3.	.2		
13	1.0	⊙	.1 3.	.2		
14		⊙	.1 3.	.2		
15		⊙	.1 3.	.2		
16	3●	⊙	.1 3.	.2		.4
17		⊙	.1 3.	.2		4.
18	2.0	⊙	.1 3.	.2		4.
19		⊙	.1 3.	.2		4.
20	1.0 2●	⊙	.1 3.	.2		
21	1●	⊙	.1 3.	.2		
22		⊙	.1 3.	.2		
23		⊙	.1 3.	.2		3●
24	4.	⊙	.1 3.	.2		
25	4.	⊙	.1 3.	.2		
26	.4	⊙	.1 3.	.2		
27	2● .4	⊙	.1 3.	.2		
28	1●	⊙	.1 3.	.2		
29		⊙	.1 3.	.2		
30		⊙	.1 3.	.2		

DECEMBER 1772. [133]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
			First Quarter —	1. 12. 59
			Full Moon —	9. 17. 35
			Last Quarter —	17. 1. 54
			New Moon —	23. 19. 58
			First Quarter —	31. 9. 57
			Other Phenomena.	
1	Tu.		4. ♀ ☌ ☿ diff. Lat. 40'.	
2	W.		☾ ☌ ☿ 9 ^h . 18'.	
3	Th.		☾ ☌ ☿ 14 ^h . 3'.	
4	F.		8. ☾ ☌ ☿ 1 ad ☌ ☿ Im. 12 ^h .	
5	Sa.		31'. Em. 13 ^h . 38'.	
6	Su.	2d Sunday in Advent.	* passes 8'. N. of ☌'s	
7	M.	[Nicholas.	cent.	
8	Tu.	Conception of V. Mary.	☾ ☌ ☿ 2 ad ☌ ☿ Im. 13 ^h .	
9	W.		6'. Em. 14 ^h . 23'.	
10	Th.		* passes 1'. N. of ☌'s	
11	F.		center.	
12	Sa.		☾ ☌ ☿ 15 ^h . 26'.	
13	Su.	3d Sunday in Advent.	13. ☾ ☌ ☿ 1 ad ☌ ☿ Im. 16 ^h . 1 ^h 1/2'.	
14	M.	[Lucy.	Em. 16 ^h . 47'. * passes	
15	Tu.	[ends.	12 1/2'. N. of ☌'s cent.	
16	W.	O Sapientia. Camb. Ter.	☾ ☌ ☿ 2 ad ☌ ☿ Im. 17 ^h .	
17	Th.	Oxford Term ends.	20'. Em. 17 ^h . 49'.	
18	F.		* passes 14 1/2'. N. of	
19	Sa.		☌'s center.	
20	Su.	4th Sunday in Advent.	14. ☌ Stationary.	
21	M.	St. Thomas.	☾ ☌ ☿ 7 ^h . 40'.	
22	Tu.		☾ ☌ ☿ 12 ^h . 19'.	
23	W.		☾ ☌ ☿ 21 ^h . 17'.	
24	Th.		16. ☾ ☌ ☿ Im. 17 ^h . 19'.	
25	F.	Christmas-day.	Em. 18 ^h . 18'. * passes	
26	Sa.	St. Stephen.	10'. N. of ☌'s cent.	
27	Su.	1st Sund. after Christmas.	20. ☌ enters ♍ at 17 ^h . 7'.	
28	M.	Innocents. [St. John.	☾ ☌ ☿ 21 ^h . 33'. Occult.	
29	Tu.		☾ ☌ ☿ 4 ad ☌ ☿ 23 ^h . 18'.	
30	W.		21. ☾ ☌ ☿ 3 ^h . 10'.	
31	Th.	Silvester.	☾ ☌ ☿ 7 ^h . 18'.	
			28. ☾ ☌ ☿ 1 ^h . 23'.	
			31. ☾ ☌ ☿ 16 ^h . 54'.	
			☾ ☌ ☿ 21 ^h . 39'.	

[134] D E C E M B E R 1772.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Tu.	8. 9. 56. 21	16. 33. 10. 3	21. 57. 56	10. 17. 4	
2	W.	8. 10. 57. 18	16. 37. 30. 5	22. 6. 42	9. 53. 7	23, 7
3	Th.	8. 11. 58. 15	16. 41. 51. 4	22. 15. 2	9. 29. 5	24, 2
4	F.	8. 12. 59. 13	16. 46. 12. 7	22. 22. 56	9. 4. 8	24, 7
5	Sa.	8. 14. 0. 12	16. 50. 34. 6	22. 30. 23	8. 39. 5	25, 3
						25, 8
6	Su.	8. 15. 1. 11	16. 54. 57. 0	22. 37. 25	8. 13. 7	
7	M.	8. 16. 2. 11	16. 59. 20. 0	22. 44. 0	7. 47. 4	26, 3
8	Tu.	8. 17. 3. 11	17. 3. 43. 4	22. 50. 7	7. 20. 7	26, 7
9	W.	8. 18. 4. 12	17. 8. 7. 1	22. 55. 48	6. 53. 6	27, 1
10	Th.	8. 19. 5. 14	17. 12. 31. 3	23. 1. 2	6. 26. 0	27, 6
						27, 9
11	F.	8. 20. 6. 17	17. 16. 55. 8	23. 5. 48	5. 58. 1	
12	Sa.	8. 21. 7. 21	17. 21. 20. 8	23. 10. 7	5. 29. 8	28, 3
13	Su.	8. 22. 8. 25	17. 25. 46. 0	23. 13. 58	5. 1. 1	28, 7
14	M.	8. 23. 9. 31	17. 30. 11. 6	23. 17. 21	4. 32. 2	28, 9
15	Tu.	8. 24. 10. 37	17. 34. 37. 4	23. 20. 17	4. 3. 0	29, 2
						29, 5
16	W.	8. 25. 11. 44	17. 39. 3. 5	23. 22. 44	3. 33. 5	
17	Th.	8. 26. 12. 52	17. 43. 29. 8	23. 24. 43	3. 3. 8	29, 7
18	F.	8. 27. 14. 1	17. 47. 56. 3	23. 26. 14	2. 34. 0	29, 8
19	Sa.	8. 28. 15. 11	17. 52. 23. 0	23. 27. 17	2. 4. 0	30, 0
20	Su.	8. 29. 16. 21	17. 56. 49. 7	23. 27. 51	1. 33. 9	30, 1
						30, 1
21	M.	9. 0. 17. 32	18. 1. 16. 5	23. 27. 57	1. 3. 8	
22	Tu.	9. 1. 18. 44	18. 5. 43. 3	23. 27. 35	0. 33. 6	30, 2
23	W.	9. 2. 19. 57	18. 10. 10. 1	23. 26. 44	0. 3. 4	30, 2
24	Th.	9. 3. 21. 9	18. 14. 36. 9	23. 25. 25	Ad: 26. 8	30, 2
25	F.	9. 4. 22. 21	18. 19. 3. 6	23. 23. 38	0. 56. 8	30, 0
						30, 0
26	Sa.	9. 5. 23. 34	18. 23. 30. 2	23. 21. 22	1. 26. 8	
27	Su.	9. 6. 24. 46	18. 27. 56. 5	23. 18. 38	1. 56. 6	29, 8
28	M.	9. 7. 25. 59	18. 32. 22. 7	23. 15. 26	2. 26. 1	29, 5
29	Tu.	9. 8. 27. 11	18. 36. 48. 7	23. 11. 46	2. 55. 4	29, 3
30	W.	9. 9. 28. 23	18. 41. 14. 3	23. 7. 39	3. 24. 4	29, 0
						28, 7
31	Th.	9. 10. 29. 35	18. 45. 39. 7	23. 3. 3	3. 53. 1	

DECEMBER 1772. [135]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 17, 2	1. 10, 3	2. 32, 3	9. 993548	6. 17. 2
7	16. 18, 0	1. 10, 7	2. 32, 5	9. 993195	6. 16. 43
13	16. 18, 6	1. 11, 0	2. 32, 7	9. 992936	6. 16. 24
19	16. 19, 0	1. 11, 1	2. 32, 8	9. 992774	6. 16. 5
25	16. 19, 2	1. 11, 1	2. 32, 9	9. 992678	6. 15. 46

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	22. 44. 11	4	12. 33. 49	7	18. 40. 21 I
3	17. 12. 27	8	1. 50. 11	7	22. 5. 31 E
5	11. 40. 41	11	15. 6. 20	14	22. 39. 11 I
7	6* 8. 56	15	4* 22. 28	15	2. 3. 43 E
9	0. 37. 5	18	17. 38. 31	22	2. 37. 51 I
10	19. 5. 18	22	6* 54. 31	22	6* 1. 41 E
12	13. 33. 23	25	20. 10. 29	29	6* 36. 12 I
14	8* 1. 35	29	9. 26. 26	29	9. 59. 27 E
16	2. 29. 37			IV. Satellite.	
17	20. 57. 47			8	15. 12. 7 I
19	15. 25. 52			8	19. 29. 9 E
21	9. 53. 56			25	9. 22. 20 I
23	4* 22. 1			25	13. 35. 2 E
24	22. 50. 1				
26	17. 18. 12				
28	11. 46. 16				
30	6* 14. 24				

[136] DECEMBER 1772.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 19^d.

1	9. 23. 16	6. 28 S	8. 22. 55	2. 7 S	25. 24 S	0. 55
7	10. 13. 4	6. 59	9. 1. 58	2. 18	25. 45	1. 9
13	11. 5. 58	6. 34	9. 10. 37	2. 10	25. 12	1. 21
19	0. 3. 15	4. 44	9. 18. 8	1. 37	23. 50	1. 27
25	1. 5. 50	1. 13	9. 22. 47	0. 27	21. 58	1. 20

VENUS.

1	4. 18. 11	3. 2 N	6. 27. 8	2. 13 N	8. 23 S	21. 11
7	4. 27. 56	3. 15	7. 4. 12	2. 17	10. 47	21. 12
13	5. 7. 41	3. 22	7. 11. 20	2. 16	13. 5	21. 13
19	5. 17. 26	3. 23	7. 18. 31	2. 12	15. 14	21. 15
25	5. 27. 10	3. 18	7. 25. 46	2. 5	17. 12	21. 17

MARS.

1	3. 7. 57	1. 25 N	4. 10. 24	2. 37 N	20. 10 N	16. 19
7	3. 10. 47	1. 28	4. 10. 56	2. 52	20. 16	15. 55
13	3. 13. 36	1. 31	4. 11. 1	3. 8	20. 30	15. 29
19	3. 16. 23	1. 34	4. 10. 37	3. 24	20. 52	15. 1
25	3. 19. 10	1. 37	4. 9. 43	3. 40	21. 22	14. 31

JUPITER.

1	11. 7. 0	1. 7 S	10. 25. 57	1. 6 S	13. 55 S	5. 20
7	11. 7. 32	1. 8	10. 26. 48	1. 5	13. 37	4. 57
13	11. 8. 5	1. 8	10. 27. 44	1. 4	13. 17	4. 35
19	11. 8. 37	1. 9	10. 28. 44	1. 3	12. 55	4. 12
25	11. 9. 10	1. 9	10. 29. 49	1. 3	12. 32	3. 49

SATURN. $\square$ 3^d. 19^h.

1	5. 6. 37	1. 47 N	5. 12. 42	1. 47 N	8. 27 N	18. 22
7	5. 6. 50	1. 47	5. 12. 54	1. 48	8. 23	17. 57
13	5. 7. 2	1. 47	5. 13. 2	1. 50	8. 22	17. 31
19	5. 7. 15	1. 48	5. 13. 6	1. 51	8. 21	17. 5
25	5. 7. 28	1. 48	5. 13. 7	1. 53	8. 23	16. 38

DECEMBER 1772. [137]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	11. 3. 52. 51	11. 9. 59. 25	3. 36. 58 N	3. 12. 21 N
2	W.	11. 16. 2. 14	11. 22. 1. 45	2. 45. 49	2. 17. 39
3	Th.	11. 27. 58. 45	0. 3. 53. 54	1. 48. 13	1. 17. 48
4	F.	0. 9. 47. 50	0. 15. 41. 12	0. 46. 37 N	0. 15. 3 N
5	Sa.	0. 21. 34. 39	0. 27. 28. 41	0. 16. 37 S	0. 48. 14 S
6	Su.	1. 3. 23. 53	1. 9. 20. 41	1. 19. 19	1. 49. 40
7	M.	1. 15. 19. 31	1. 21. 20. 41	2. 18. 53	2. 46. 45
8	Tu.	1. 27. 24. 32	2. 3. 31. 17	3. 12. 52	3. 36. 56
9	W.	2. 9. 41. 4	2. 15. 54. 4	3. 58. 37	4. 17. 39
10	Th.	2. 22. 10. 12	2. 28. 29. 41	4. 33. 42	4. 46. 32
11	F.	3. 4. 52. 17	3. 11. 18. 6	4. 55. 52	5. 1. 32
12	Sa.	3. 17. 46. 59	3. 24. 18. 51	5. 3. 21	5. 1. 15
13	Su.	4. 0. 53. 38	4. 7. 31. 15	4. 55. 8	4. 45. 2
14	M.	4. 14. 11. 38	4. 20. 54. 46	4. 30. 55	4. 13. 1
15	Tu.	4. 27. 40. 34	5. 4. 29. 7	3. 51. 25	3. 26. 24
16	W.	5. 11. 20. 19	5. 18. 14. 17	2. 58. 13	2. 27. 14
17	Th.	5. 25. 11. 4	6. 2. 10. 34	1. 53. 53	1. 18. 36
18	F.	6. 9. 12. 56	6. 16. 18. 2	0. 41. 52 S	0. 4. 16 S
19	Sa.	6. 23. 25. 43	7. 0. 35. 53	0. 33. 36 N	1. 11. 7 N
20	Su.	7. 7. 48. 9	7. 15. 2. 8	1. 47. 39	2. 22. 32
21	M.	7. 22. 17. 20	7. 29. 33. 7	2. 55. 11	3. 24. 59
22	Tu.	8. 6. 48. 53	8. 14. 3. 37	3. 51. 26	4. 14. 2
23	W.	8. 21. 16. 42	8. 28. 27. 9	4. 32. 27	4. 46. 24
24	Th.	9. 5. 34. 9	9. 12. 37. 1	4. 55. 47	5. 0. 30
25	F.	9. 19. 35. 3	9. 26. 27. 43	5. 0. 40	4. 56. 28
26	Sa.	10. 3. 14. 35	10. 9. 55. 29	4. 48. 5	4. 35. 50
27	Su.	10. 16. 30. 18	10. 22. 59. 7	4. 20. 3	4. 1. 5
28	M.	10. 29. 22. 4	11. 5. 39. 28	3. 39. 22	3. 15. 15
29	Tu.	11. 11. 51. 49	11. 17. 59. 33	2. 49. 7	2. 21. 14
30	W.	11. 24. 3. 14	0. 0. 3. 36	1. 52. 6	1. 21. 55
31	Th.	0. 6. 1. 13	0. 11. 56. 51	0. 51. 5	0. 10. 51

[138] D E C E M B E R 1772.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's Declinat. at Noon.	D's Declinat. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	8	5. 55	334. 28	340. 19	6. 44 S	4. 52 S
2	W.	9	6. 38	346. 5	351. 47	2. 58 S	1. 3 S
3	Th.	10	7. 20	357. 26	3. 4	0. 51 N	2. 44 N
4	F.	11	8. 2	8. 42	14. 21	4. 36	6. 25
5	Sa.	12	8. 45	20. 3	25. 48	8. 10	9. 50
6	Su.	13	9. 29	31. 37	37. 32	11. 25	12. 53
7	M.	14	10. 14	43. 33	49. 40	14. 14	15. 26
8	Tu.	15	11. 1	55. 53	62. 13	16. 28	17. 20
9	W.	16	11. 50	68. 39	75. 10	18. 0	18. 27
10	Th.	17	12. 40	81. 45	88. 25	18. 41	18. 41
11	F.	18	13. 31	95. 7	101. 51	18. 27	17. 59
12	Sa.	19	14. 22	108. 35	115. 18	17. 16	16. 20
13	Su.	20	15. 13	122. 1	128. 41	15. 11	13. 49
14	M.	21	16. 3	135. 20	141. 56	12. 16	10. 32
15	Tu.	22	16. 53	148. 31	155. 6	8. 40	6. 40
16	W.	23	17. 43	161. 39	168. 14	4. 34	2. 24 N
17	Th.	24	18. 34	174. 50	181. 28	0. 10 N	2. 4 S
18	F.	25	19. 26	188. 11	194. 59	4. 18 S	6. 29
19	Sa.	26	20. 19	201. 53	208. 54	8. 35	10. 35
20	Su.	27	21. 15	216. 2	223. 16	12. 26	14. 6
21	M.	28	22. 13	230. 39	238. 7	15. 32	16. 44
22	Tu.	29	23. 11	245. 39	253. 14	17. 40	18. 18
23	W.	1	0	260. 49	268. 22	18. 39	18. 41
24	Th.	2	0. 9	275. 51	283. 13	18. 25	17. 53
25	F.	3	1. 5	290. 27	297. 31	17. 4	16. 2
26	Sa.	4	1. 58	304. 24	311. 7	14. 47	13. 21
27	Su.	5	2. 48	317. 38	324. 0	11. 46	10. 4
28	M.	6	3. 35	330. 12	336. 15	8. 17	6. 25
29	Tu.	7	4. 20	342. 12	348. 2	4. 31	2. 35 S
30	W.	8	5. 3	353. 48	359. 31	0. 39 S	1. 17 N
31	Th.	9	5. 45	5. 11	10. 51	3. 11 N	5. 1

D E C E M B E R 1772. [139]							
Days of the Month.	Days of the Week.	Semidr. D at Noon.	Semidr. D at Midnight.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Mid.
		M. S.	M. S.	M. S.	M. S.		
1	Tu.	15. 6	15. 1	55. 26	55. 8	5115	5138
2	W.	14. 58	14. 54	54. 54	54. 41	5157	5174
3	Th.	14. 51	14. 49	54. 31	54. 24	5187	5197
4	F.	14. 48	14. 47	54. 19	54. 16	5203	5207
5	Sa.	14. 47	14. 48	54. 16	54. 17	5207	5206
6	Su.	14. 49	14. 50	54. 21	54. 27	5201	5193
7	M.	14. 52	14. 54	54. 34	54. 42	5183	5173
8	Tu.	14. 57	15. 0	54. 53	55. 4	5158	5144
9	W.	15. 4	15. 7	55. 16	55. 29	5128	5111
10	Th.	15. 11	15. 14	55. 42	55. 56	5094	5076
11	F.	15. 19	15. 22	56. 11	56. 25	5056	5038
12	Sa.	15. 27	15. 31	56. 41	56. 56	5018	4999
13	Su.	15. 35	15. 39	57. 11	57. 26	4980	4961
14	M.	15. 43	15. 47	57. 40	57. 56	4943	4923
15	Tu.	15. 51	15. 55	58. 10	58. 25	4906	4887
16	W.	15. 59	16. 3	58. 39	58. 53	4870	4853
17	Th.	16. 6	16. 10	59. 7	59. 19	4835	4821
18	F.	16. 13	16. 16	59. 31	59. 41	4806	4794
19	Sa.	16. 18	16. 20	59. 50	59. 58	4783	4773
20	Su.	16. 22	16. 22	60. 3	60. 5	4768	4765
21	M.	16. 23	16. 22	60. 5	60. 3	4765	4768
22	Tu.	16. 20	16. 18	59. 57	59. 49	4775	4784
23	W.	16. 15	16. 11	59. 37	59. 23	4799	4816
24	Th.	16. 6	16. 1	59. 6	58. 46	4837	4861
25	F.	15. 55	15. 49	58. 26	58. 3	4886	4915
26	Sa.	15. 43	15. 37	57. 40	57. 17	4943	4972
27	Su.	15. 30	15. 24	56. 53	56. 30	5003	5032
28	M.	15. 18	15. 12	56. 9	55. 48	5059	5086
29	Tu.	15. 7	15. 3	55. 29	55. 13	5111	5132
30	W.	14. 59	14. 55	54. 59	54. 46	5150	5167
31	Th.	14. 53	14. 51	54. 37	54. 30	5179	5189

[140] D E C E M B E R 1772.

Distances of ♃'s Center from Stars, and from ☉ east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	♈ Arietis.	60. 26. 43	58. 57. 7	57. 27. 49	55. 58. 49
2		48. 38. 29	47. 11. 23	45. 44. 37	44. 18. 12
3		37. 11. 21			
3	Aldeba- ran.	68. 56. 36	67. 27. 26	65. 58. 21	64. 29. 21
4		57. 5. 24	55. 36. 45	54. 8. 6	52. 39. 29
5		45. 16. 17	43. 47. 35	42. 18. 59	40. 50. 2
6		33. 25. 7	31. 55. 54	30. 26. 36	28. 57. 13
7		21. 28. 52	19. 58. 55	18. 28. 53	16. 58. 46
8	Pollux.	53. 30. 46	52. 2. 18	50. 33. 50	49. 5. 22
9		41. 43. 11	40. 14. 56	38. 46. 48	37. 18. 48
10	Regulus.	64. 38. 11	63. 4. 12	61. 30. 2	59. 55. 42
11		52. 1. 30	50. 26. 8	48. 50. 36	47. 14. 55
12		39. 14. 12	37. 37. 38	36. 0. 56	34. 24. 7
13		26. 18. 36	24. 41. 20	23. 4. 6	21. 26. 57
14		13. 25. 36			
14	Spica ♏	66. 23. 55	64. 43. 42	63. 3. 18	61. 22. 43
15		52. 57. 6	51. 15. 24	49. 33. 31	47. 51. 27
16		39. 18. 26	37. 35. 17	35. 51. 58	34. 8. 28
17		25. 28. 29	23. 44. 4	21. 59. 33	20. 14. 57
15	The Sun.	116. 26. 10	114. 52. 22	113. 18. 22	111. 44. 10
16		103. 50. 17	102. 14. 54	100. 39. 20	99. 3. 34
17		91. 1. 46	89. 24. 51	87. 47. 44	86. 10. 26
18		78. 1. 8	76. 22. 44	74. 44. 10	73. 5. 27
19		64. 49. 33	63. 9. 56	61. 30. 11	59. 50. 20
20		51. 29. 33	49. 49. 9	48. 8. 44	46. 28. 16
25	♊ Pegasi.	60. 46. 29	59. 9. 23	57. 32. 48	55. 56. 46
26		48. 6. 7	46. 34. 5	45. 2. 51	43. 32. 27
27		36. 15. 1	34. 50. 57	33. 28. 16	32. 7. 4
28	♈ Arietis.	64. 52. 57	63. 20. 29	61. 48. 23	60. 16. 40
29		52. 43. 41	51. 14. 13	49. 45. 9	48. 16. 28
30		40. 59. 11			
30	Aldeba- ran.	72. 50. 57	71. 20. 20	69. 49. 54	68. 19. 39
31		60. 50. 54	59. 21. 33	57. 52. 18	56. 23. 9
J. 1		48. 58. 39			

D E C E M B E R 1772. [141]

Distances of ♄'s Center from Stars, and from ☉ east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	♈ Arietis	54. 30. 7	53. 1. 44	51. 33. 40	50. 5. 55
2		42. 52. 7	41. 26. 23	40. 1. 1	38. 36. 1
3	♈ Aldebaran.	63. 0. 27	61. 31. 37	60. 2. 50	58. 34. 5
4		51. 10. 52	49. 42. 15	48. 13. 37	46. 44. 57
5		39. 21. 11	37. 52. 16	36. 23. 17	34. 54. 14
6		27. 27. 45	25. 58. 10	24. 28. 29	22. 58. 43
7		15. 28. 34			
7	♊ Pollux.	59. 23. 59	57. 55. 45	56. 27. 28	54. 59. 9
8		47. 36. 54	46. 8. 25	44. 39. 57	43. 11. 32
9		35. 50. 58			
9	♊ Regulus.	70. 52. 14	69. 19. 1	67. 45. 35	66. 11. 59
10		58. 21. 11	56. 46. 31	55. 11. 41	53. 36. 41
11		45. 39. 4	44. 3. 4	42. 26. 55	40. 50. 38
12		32. 47. 11	31. 10. 9	29. 33. 2	27. 55. 50
13		19. 49. 58	18. 13. 11	16. 36. 47	15. 0. 53
14	♊ Spica	59. 41. 58	58. 1. 2	56. 19. 54	54. 38. 36
15		46. 9. 12	44. 26. 47	42. 44. 11	41. 1. 24
16		32. 24. 48	30. 40. 56	28. 56. 56	27. 12. 47
17		18. 30. 15			
14	♊ The Sun.		121. 6. 20	119. 33. 9	117. 59. 46
15		110. 9. 46	108. 35. 11	107. 0. 25	105. 25. 27
16		97. 27. 36	95. 51. 26	94. 15. 4	92. 38. 31
17		84. 32. 57	82. 55. 16	81. 17. 24	79. 39. 21
18		71. 26. 34	69. 47. 32	68. 8. 21	66. 29. 1
19		58. 10. 21	56. 30. 16	54. 50. 6	53. 9. 52
20		44. 47. 47	43. 7. 17	41. 26. 48	39. 46. 20
25	♊ ♀ Pegasi.	54. 21. 20	52. 46. 30	51. 12. 21	49. 38. 53
26		42. 2. 56	40. 34. 20	39. 6. 45	37. 40. 18
27		30. 47. 30			
27	♈ Arietis.	71. 6. 38	69. 32. 39	67. 59. 2	66. 25. 48
28		58. 45. 19	57. 14. 21	55. 43. 45	54. 13. 32
29		46. 48. 12	45. 20. 20	43. 52. 52	42. 25. 49
30	♈ Aldebaran.	66. 49. 36	65. 19. 43	63. 49. 58	62. 20. 22
31		54. 54. 6	53. 25. 8	51. 56. 14	50. 27. 24

[142] DECEMBER 1772.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	83. 57. 13	85. 21. 25	86. 45. 23	88. 9. 7
2		95. 4. 35	96. 27. 4	97. 49. 22	99. 11. 29
3		106. 0. 1	107. 21. 21	108. 42. 36	110. 3. 45
4		116. 48. 27	118. 9. 14	119. 30. 0	120. 50. 45
2	γ Capric.	45. 6. 1	46. 36. 20	48. 6. 29	49. 36. 28
3	α Aquilæ.	62. 40. 59	64. 0. 13	65. 19. 36	66. 39. 8
4		73. 18. 36	74. 38. 48	75. 59. 6	77. 19. 29
5		84. 2. 42			
5	α Pegasi.	36. 25. 9	37. 42. 55	39. 1. 22	40. 20. 27
6		47. 4. 5	48. 26. 12	49. 48. 44	51. 11. 38
7		58. 11. 19	59. 36. 11	61. 1. 20	62. 26. 45
8		69. 37. 53	71. 4. 51	72. 32. 4	73. 59. 30
9	α Arietis.	37. 43. 17	39. 11. 21	40. 39. 54	42. 8. 53
10		49. 39. 36	51. 10. 48	52. 42. 18	54. 14. 7
11	Aldebaran.	28. 8. 2	29. 43. 40	31. 19. 31	32. 55. 34
12		40. 58. 46	42. 35. 59	44. 13. 24	45. 51. 0
13		54. 1. 52	55. 40. 37	57. 19. 32	58. 58. 39
14		67. 17. 5			
14	Pollux.	26. 31. 46	28. 1. 41	29. 32. 46	31. 4. 56
15		38. 57. 55	40. 34. 28	42. 11. 31	43. 49. 5
16		52. 3. 16			
16	Regulus.	15. 2. 54	16. 42. 13	18. 22. 23	20. 3. 19
17		28. 35. 51	30. 19. 31	32. 3. 29	33. 47. 44
18		42. 33. 3	44. 18. 50	46. 4. 49	47. 51. 1
19		56. 44. 48	58. 32. 6	60. 19. 33	62. 7. 9
20		71. 7. 5			
20	Spica μ	17. 32. 51	19. 20. 38	21. 8. 36	22. 56. 44
21		31. 59. 21	33. 48. 5	35. 36. 50	37. 25. 37
22		46. 29. 17	48. 17. 51	50. 6. 20	51. 54. 42
27	The Sun.	40. 17. 10	41. 46. 20	43. 15. 10	44. 43. 41
28		52. 1. 34	53. 28. 13	54. 54. 34	56. 20. 38
29		63. 26. 43	64. 51. 7	66. 15. 17	67. 39. 12
30		74. 35. 21	75. 57. 58	77. 20. 25	78. 42. 41
31		85. 31. 40	86. 53. 4	88. 14. 22	89. 35. 34
J. 1		96. 20. 21			
J. 1	α Aquilæ.	70. 1. 35	71. 22. 0	72. 42. 28	74. 2. 57
J. 1		80. 45. 55			

D E C E M B E R 1772. [143]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	89. 32. 38	90. 55. 56	92. 19. 1	93. 41. 54
2		100. 33. 28	101. 55. 18	103. 17. 0	104. 38. 34
3		111. 24. 49	112. 45. 49	114. 6. 45	115. 27. 38
1	β Capri- corni.	39. 2. 45	40. 33. 52	42. 4. 47	43. 35. 30
2		51. 6. 16			
2	α Aquilæ.	57. 25. 49	58. 44. 19	60. 3. 1	61. 21. 54
3		67. 58. 48	69. 18. 35	70. 38. 29	71. 58. 29
4		78. 39. 58	80. 0. 32	81. 21. 10	82. 41. 53
5	α Pegasi.	41. 40. 8	43. 0. 22	44. 21. 8	45. 42. 23
6		52. 34. 55	53. 58. 32	55. 22. 28	56. 46. 44
7		63. 52. 28	65. 18. 26	66. 44. 40	68. 11. 9
8		75. 27. 9			
8	α Arietis.	31. 56. 27	33. 22. 17	34. 48. 43	36. 15. 44
9		43. 38. 19	45. 8. 6	46. 38. 14	48. 8. 44
10		55. 46. 13			
10	Aldeba- ran.	21. 47. 36	23. 22. 23	24. 57. 23	26. 32. 36
11		34. 31. 49	36. 8. 16	37. 44. 54	39. 21. 44
12		47. 28. 47	49. 6. 45	50. 44. 57	52. 23. 19
13		60. 37. 58	62. 17. 28	63. 57. 9	65. 37. 1
14	Pollux.	32. 38. 2	34. 11. 56	35. 46. 35	37. 21. 56
15		45. 27. 9	47. 5. 38	48. 44. 30	50. 23. 43
16	Regulus.	21. 44. 53	23. 26. 59	25. 9. 33	26. 52. 31
17		35. 32. 16	37. 17. 6	39. 2. 10	40. 47. 29
18		49. 37. 24	51. 23. 59	53. 10. 44	54. 57. 41
19		63. 54. 54	65. 42. 47	67. 30. 46	69. 18. 52
20	Spica μ	24. 45. 3	26. 33. 29	28. 22. 1	30. 10. 39
21		39. 14. 24	41. 3. 11	42. 51. 56	44. 40. 38
22		53. 42. 56			
27	The Sun.	46. 11. 53	47. 39. 46	49. 7. 20	50. 34. 36
28		57. 46. 24	59. 11. 53	60. 37. 6	62. 2. 3
29		69. 2. 53	70. 26. 19	71. 49. 32	73. 12. 33
30		80. 4. 47	81. 26. 43	82. 48. 30	84. 10. 9
31		90. 56. 40	92. 17. 41	93. 38. 38	94. 59. 31
31	α Aquilæ.	75. 23. 29	76. 44. 2	78. 4. 38	79. 25. 15

[144] DECEMBER 1772.

Configurations of the SATELLITES of JUPITER
at 6 o'clock in the Evening.

1		3. 2.	⊙	.1	.4
2		3.	⊙	.1. 2.	.4
3		.3	⊙	.1.	.2
4		.1	⊙	.2.	.4
5		.3	⊙	.1.	.4.
6	1.0		⊙	.1	.3. 4.
7	1.0		⊙	.3. 2. 4.	
8	4.0	3. 2.	⊙	.1	
9		3. 4. 1.	⊙		
10		.2	⊙	.1.	
11	4.	.1	⊙	.2.	3.0
12	4.	.2.	⊙	.1.	
13	.4	.1	⊙	.3.	2.0
14	1.0		⊙	.3. 2.	
15		.3. 2.	⊙	.1	
16		.3. 1. 4.	⊙		
17		.3	⊙	1.0 4.	
18		.1. 3.	⊙	.2.	.4
19		.2.	⊙	.1.	.3. 4.
20		.1. 2.	⊙	.3.	.4
21			⊙	.1.	2.0 3. 4.
22	1.0 2.0 3.0		⊙		.4.
23		.3. 1.	⊙		.4.
24		.3.	⊙	.1. 2.	
25		.1. 4.	⊙	.2.	
26		.4. 2.	⊙	.1.	.3
27		.1. 2.	⊙		.3
28	4.		⊙	.1.	.3. 2.
29	.4	.3.	⊙		2.0 1.0
30	.4	.3. 2.	⊙		1.0
31			⊙	2.0 1.	

EXPLANATION and USE OF THE ARTICLES

Contained in the

ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations are made according to apparent Time by the Meridian of the Royal Observatory at Greenwich. They are likewise adapted to apparent Noon, except where they are otherwise distinguished, as the Eclipses and Configurations of Jupiter's Satellites, the Moon's Places, &c, computed for Midnight, and the Distances of the Moon from the Sun and Stars for every third Hour; which are all computed to the apparent Times set down.

Apparent Time is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours, or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they
E differ;

differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, 15 Hours, belong to January 11 at Three in the Morning by civil Reckoning.

There are 12 Pages for every Month. The first Column of the first Page of each Month contains the Day of the Month; the Second, the Day of the Week expressed concisely by the initial Letter or Letters, *Su.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: The third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of new and full Moon, and of the first and last Quarter, or two Quadratures with the Sun: Beneath are contained miscellaneous Phenomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixed Stars not less than the fourth Magnitude, by the Moon, as they should happen at Greenwich by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° . North and 40° . South: The Conjunctions, Oppositions and Quadratures of the superior Planets with the Sun; and the Conjunctions and greatest Elongations of the inferior Planets from the Sun, the Entrance of the Sun into the several Signs, and any other remarkable Phenomena.

The Stars are expressed by Bayer's Characters of Reference. The Conjunction of the Moon or a Planet with a Star, is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately after. The Case is the same with Respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of *Im.* or Immersion, to signify the Disappearance behind the Moon; and *Em.* or Emer-
 tion, to signify the Re-appearance of the same. Thus $8^{\text{d}} \text{ } \text{D} \text{ } \text{A} \text{ } \text{V}^{\text{h}}$
 $16^{\text{h}}. 22'$ signifies that the Moon will be in Conjunction with
 the Star $\text{A} \text{ } \text{V}^{\text{h}}$ on the Eighth Day at $16^{\text{h}}. 22'$ exclusive of
 Parallax: And $10^{\text{d}} \text{ } \text{D} \text{ } \text{II} \text{ } \text{Imm. } 9^{\text{h}} 14' \text{ } \text{Em. } 10^{\text{h}}. 23'$ signi-
 fies that the Moon will eclipse II on the 10th Day, the
 Immersion being at $9^{\text{h}} 14'$ and at $10^{\text{h}}. 23'$ apparent Time
 at Greenwich.

The

The Occultations set down are those only visible at Greenwich; and the Circumstances will not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

Eclipses of the Sun, and Occultations of fixed Stars by the Moon, if observed in Places whose Latitude and Longitude are well determined, may be applied to the Correction of the lunar Tables; but if made in Places whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been at all or but indifferently determined; since the necessary Calculations may be made at any Time afterwards by themselves, at leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where an Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the Ephemeris, and converting it into Degrees, at the Rate of 15 to One Hour, &c. or more briefly by Table Pages 6, 7, 8, of the Tables requisite to be used with the Ephemeris. But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. It is unnecessary to mention that even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a considerably greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out

frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Days of the Oppositions, Quadratures, &c. of the Planets with Respect to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Two first Columns of the Second Page of the Month contain the Day of the Month and Week as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time, with the Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the Ephemeris, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the Four last Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying as 24^h . is to the Hour from Noon reckoned by the Meridian of Greenwich, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from Greenwich, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15° , and One Minute of Time to 15 Minutes, or more briefly by Pages 6, 7, and 8, of the requisite Tables) according as the Place is to the West or to the East of Greenwich. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at $4^h. 35'$. being in $21^\circ 15'$. Longitude East of Greenwich. The Difference of Longitude turned into Time by Table Page 6, is $1^h. 25'$ which subtracted from $4^h. 35'$. because the Place is East of Greenwich, leaves $3^h. 10'$. for the Time reduced to the Meridian of Greenwich. The Sun's Longitude the preceding Noon is, $9^\circ. 29'. 18''. 2''$. and the following Noon is, $10^\circ. 02'. 19'. 4''$. the Difference is, $1^\circ. 1'. 2''$. or $61'. 2''$. the daily Variation. Then say, as 24^h . is to $3^h. 10'$. so is $61'. 2''$ to $8'. 3''$. which added to $9^\circ. 29'. 18''. 2''$. the Sun's Longitude on the preceding

preceding Noon, gives $9^{\circ}.29'.26''.5''$ the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the Ephemeris.

The Sun's Longitude serves also to compute the Aberration of the fixed Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose, the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the Ephemeris.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixed Star, suppose one contained Page 12 or 13 of the requisite Tables; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required jointly with the Latitude of the Place and the Sun's horary Angle to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance
from

from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes, the Sun's Declination must be found to the Time given nearly reduced to the Meridian of Greenwich, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with Respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Centre over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on Account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page 2d; and when applied according to its Title to the Apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it is proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the Ephemeris for the Noon at Greenwich, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the Ephemeris answering to Noon were computed to 0^h. increased, or 24 Hours diminished, by the Equation of Time: And the Moon's Places set down for Midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having little to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the Ephemeris, all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Watches made upon Mr. John Harrison's or other equivalent Principles should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch, the Difference will be the Longitude in Time from the Meridian by which the Watch was set; as near as the Going of the Watch can be depended upon.

The Equation of Time was computed for the Ephemeris of 1767 from the Table, Page 3d of Mayer's Tables; but on Account of that Table being made only to the nearest Second without Decimals, and the Neglect of the small Equations of the Sun, the Calculations of that Article in the Year 1767, cannot always be depended upon nearer than Two Seconds. For the Year 1768 and the following Years it will be computed in the strict Manner explained in my Remarks upon that Subject, in the *Philos. Transact.* Vol. liv. P. 342 for the Year 1764; namely, by taking the Difference of the Sun's true right Ascension, and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1' to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude.

The Semidiameter of the Sun, Page 3d, is necessary to reduce the observed Altitude of his upper or lower Limb to that of

of the Centre; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centres. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micro-meters, by Comparison with the Measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Verse Sine of the uneclipsed Part has been measured with the Micro-meter. The Semidiameters of the Sun in Mayer's Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be $16'. 2'', 8.$ which Mr. Mayer says he deduced from above 130 Observations taken with his Six Foot mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this Opportunity to remark that the Quadrant here mentioned was given to the University of Göttingen by his late Majesty, and was made by Mr. John Bird after the Model of the Eight Foot mural Arch, which he finished for the Royal Observatory at Greenwich, and put up there in the Year 1750. Mr. Mayer made his Observations with his Six Foot mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at $23^{\circ}. 28'. 16''.$ which Dr. Bradley settled by his Observations made in the Years 1750 and 1751, at $23^{\circ}. 28'. 18''.$ The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about $\frac{1}{2}$ a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. Bradley's, see Page 2d of requisite Tables, (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than Two different Tables.

The Time of the Sun's Semidiameter passing the Meridian, serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Centre, when only One was observed. It signifies a Portion of apparent Time; or even mean Time, the Difference being absolutely insensible upon so small an Interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of $1'$. to $15'$. and $1''$. to $15''$. gives the
Time

Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistick Logarithm of his Semidiameter, the Sum is the logistick Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required.

From the Time of the Sun's Semidiameter passing the Meridian may be also found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.—The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independant of the Distances contained in the nautical Ephemeris; See British Mariner's Guide, Page 49, and Table at the End of the same, Page 25; which is also copied at Page 14 of requisite Tables. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined to equal Accuracy with the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses, and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from Time to Time. In my Voyage to Barbadoes under the Direction of the Commissioners of Longitude, I made a full Trial of the late Mr. Irwin's Marine Chair proposed for this Purpose, but found it totally impracticable to derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as

Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes, from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet, and Telescopes of Mr. Dollond's Construction with Two Object Glasses from Five to 10 Feet; or, which are still more convenient, those of $3\frac{1}{2}$ Feet, which he has lately found a Method of constructing with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons who visit distant Countries are not more diligent to multiply Observations of this Kind, for want of which, the Observations made by Astronomers on Shore lose Half their Use, and the Improvement of Geography seems to be at a Stand. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of, rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the Purpose. The Eclipses carefully calculated and set down in the Ephemeris, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person who shall be under any Meridian different from Greenwich, must turn his Difference of Longitude into Time: See Table Page 6, 7, and 8, and add it to or subtract it from the Time of the Eclipse set down in the Ephemeris, according as he is to the East or West of Greenwich, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the

the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a Hadley's Quadrant, by Reflection from a Basin of Water or Quicksilver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a Mean of the Results for greater Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star, will be observed when we come to treat of the Method of finding the Longitude by the Observations of the Distance of the Moon from the Sun and Stars by the Help of the Ephemeris.

The Observer being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on Account of the Uncertainty of their Theories; but, if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus if the Longitude of the Place is uncertain to 30 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless when he has observed One Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the Ephemeris for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emergences signify the first Instant of its Appearance at com-

ing out of the fame. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emerfions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an astronomical Telescope be used, which reverses Objects, the Appearances will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emerfions only. The same is generally the Case with respect to the second Satellite; both the Phænomena of the same Eclipse are frequently observeable in the Two outer Satellites. The Immersions and Emerfions marked with an Asterisk in the Ephemeris are those visible at Greenwich.

To know if an Eclipse will be visible in any Place, find if Jupiter is 8° , or 10° . above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semi-diurnal Arcs, contained in the popular Book called the Mariner's Compass Rectified, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the Ephemeris, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semidiurnal Arc answering to the same Declination of the Sun: Remembering always that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semidiurnal Arc will be more than Six Hours, and if they are of contrary Denominations, it will be less than Six Hours.

The Immersion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from Greenwich is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the Ephemeris, which must be turned into Degrees, &c. by Table Page 5, 7, and 8; and will be East or West of Greenwich, as the Time observed is more or less than that of the Ephemeris.

Example: Suppose an Emerfion of the first Satellite should be observed at the Cape of Good-Hope, May 9, 1767, at $10^h 46'. 45''$. apparent Time: The Time by the Ephemeris being

being $9^{\text{h}}. 33'. 12''$. the Difference is $1^{\text{h}}. 13'. 33''$. whence by Table Page, 6, 7, and 8, the Longitude of the Cape should be $18^{\circ}. 23' 15''$. East of Greenwich, because the Time supposed to be observed at the Cape is more than that of the Ephemeris.

It may not be useless here to observe that the Longitude of the Cape of Good Hope $1^{\text{h}}. 13'. 33'' = 18^{\circ}. 23'. 15''$. set down in the British Mariner's Guide, is that of the Town; the Latitude also belongs to the same; being both determined from the Observations of Messrs. Mason and Dixon, who went thither under the Direction of the Royal Society, and observed the Transit of Venus in the Year 1761. Hence, by the Help of the Charts, I find the Longitude of the Cape Point or Promontory $18^{\circ}. 45'$. East of Greenwich, and its Latitude $34^{\circ}. 30'$. S. the Longitude of Cape Falso, $19^{\circ}. 15'$. E. and its Latitude $34^{\circ}. 34'$. S. If these Determinations of the Situations of the Cape Point and Cape Falso are in any respect uncertain, it arises from the Imperfection of the Charts I was obliged to make use of, in reducing the Longitude and Latitude from the Cape Town to the Two mentioned Points: For from the near Agreement of the Abbeé de la Caille's Observations with those of Messrs. Mason and Dixon, it is probable that the Situation of few Places is better determined than that of the Cape Town: But if any one has Possession of any Manuscript or printed Charts of these Parts that he thinks may be depended upon, or has any Opportunity of determining the Points in Question relatively to each other from the Comparison of several Journals of Ships, he may perhaps fix these Places with more Certainty than is here pretended to.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well known Meridian, is to be preferred to the Calculations of the Ephemeris for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what Correction the Calculations of the Ephemeris require by the nearest Observations to the given Time that can be obtained; which Correction applied to the Calculation of the given Eclipse in the Ephemeris, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page 4, serve to know where to look for them in the Heavens, and when

when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and apparent Time of passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call T ; take the Difference of the $\odot$ and Planets daily Variations in right Ascension in Time; if the Planet is progressive in right Ascension, or the Sum if it is retrograde, which call X ; then say, by the Rule of Proportion;

As $24^h \mp X : T :: X : e$ and $T \pm e$ will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the $\odot$ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h . and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1 1767.

The Sun's right Ascension in Time July 1st is, $6^h. 40'. 25''$. and July 2d, $6^h. 44'. 33''$. by the Ephemeris. Therefore his daily Motion in right Ascension is $4'. 8''$. The Moon's right Ascension July 1st at Noon by the Ephemeris, is $159^\circ. 2'$. answering to $10^h. 36'. 8''$. of Time, and July 2d is, $169^\circ. 39'$. answering

Answering to $10^h. 18'. 36''$. The Difference is, $42'. 28''$. of Time, from which $4'. 8''$. being subtracted leaves $38'. 20''$. Subtract $6^h. 40'. 25''$. the Sun's right Ascension July 1st, at Noon from $10^h. 36'. 8''$, the Moon's right Ascension the same Noon, the Remainder $3^h. 55'. 43''$. is the Approximate Time of the Moon's passing the Meridian. The proportional Part of $38'. 20''$ answering to this, is $6'. 17''$ and the proportional Part of $6'. 17''$. is $9''$; therefore $6'. 17''$ and $9''$ or $6'. 26''$ added to $3^h. 55'. 43''$ give $4^h. 2'. 9''$, the apparent Time of the Moon's passing the Meridian. In the Ephemeris it is $4^h. 2'$. It may also be computed by taking the Difference of the Moon's right Ascensions at Noon and Midnight, but then half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours : And if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planet's, it will be sufficient to take the first proportional Part only.

The Configurations of Jupiter's Satellites, Page 5, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark $\odot$, and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point ; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right Hand or West of Jupiter approaching him ; or to the left Hand or East of Jupiter receding from him ; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher 0 sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter ; and the black Mark $\bullet$, signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter, and eclipsed by his Body.

The 7th and 5 following Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motions,

tions, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitudes, Latitudes, and Declinations of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal Parallax, with its logarithmic or proportional Logarithm, are computed twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16^h. 22' 16". First to find the Longitude. The Moon's Longitude, July 16, at 12^h. is 0°. 6'. 40". 25". and July 17 at Noon, 0°. 13'. 47". 48". the Difference 7°. 7'. 23". is the Moon's Motion in 12 Hours; say then, by the Rule of Proportion,

As 12^h. is to 4^h. 22' 16". (the Excess of 16^h. 22' 16". above 12^h.) so is 7°. 7'. 23". to 2°. 35'. 41". which added to 0°. 6'. 40". 25". the Moon's Longitude at 12^h. gives 0°. 9'. 16'. 6", the Moon's Longitude nearly; but this must be corrected on Account of the Moon's unequal Motion in 12 Hours, by Page 11 of requisite Tables; for this Purpose take out of the Ephemeris the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows.

		1st Diff.	2d. Diff.
July 16, Noon	11. 29. 29. 34.	0. 1. "	1. "
Midnight	0. 6. 40. 58.	7. 10. 51.	3. 28.
17, Noon	0. 13. 47. 24.	7. 7. 23.	3. 44.
Midnight	0. 20. 51. 27.	7. 3. 39.	

Take their Differences, 7°. 10'. 51". 7°. 7'. 23". 7°. 3'. 39". take the Differences of these Differences, or the 2d Differences, 3'. 28". 3'. 44". and take their Mean which is 3'. 36". Now look for the Correction in Page 11 of requisite Tables answering to 4^h. 22' after Midnight, found on the Side, and 3' 36" at Top, 21" will be found under 3'. and 28" under 4'. the Difference is 7". whence 36" will require 4", and the Correction sought is 21" + 4" = 25". which, according to the Remark at the Bottom of the Table, must be added (because

cause the Motion in 12 Hours or first Differences are decreasing to $0^{\circ} 9^{\circ} 16' 6''$. the Moon's Longitude found by even Proportion; whence the Moon's true Longitude is $0^{\circ} 9^{\circ} 16' 31''$. and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, vice versa, first decrease and then increase, take half the Difference of the Two second Differences for the Mean second Difference, with which take the Correction from Page 11, and add or subtract it as the 1st. first Difference is greater or less than the third first Difference.

To find the Moon's Latitude. Take out of the Ephemeris the Two Latitudes preceding and Two following the given Time; and set them down in Order, and take their first and second Differences, and the mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table Page 11 with the Hour from Noon or Midnight on the Side, and the mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Differences are decreasing or increasing; or, more generally, according as 1st first Difference is greater or less than third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 16^h. 22', 16''.

	M's Lat. by the Ephem.	1st Dif.	2d Dif.	Mean of 2d Dif.
July 16. Noon	4 31 10 N.	18 26	1 11	1 11
— Midnight	4 49 36	13 50	4 36	4 40
17 Noon	5 3 26	9 6	4 44	
Midnight	5 12 32			

The Moon's Latitude July 16 at Midnight being $4^{\circ} 49' 36''$. N. and the Motion in the next 12 Hours being $13' 50''$. say by Proportion;

As 12^h . is to $4^h 22'$. $16''$. so is $13' 50''$. to $5' 2''$; but this must be corrected by adding $33''$. the Correction from Page 11, answering to the Hour $4^h 22'$. and the Mean Second Difference $4' 40''$, because the first Differences are decreasing, or rather because the first of them $18' 26''$. is greater than the last of them $9' 6''$. therefore the proportional Part corrected is $5' 2'' + 33'' = 5' 35''$; which added to $4^{\circ} 49' 36''$. gives $4^{\circ} 55' 11''$. N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the Ephemeris for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versa, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Correction from Table Page 11, answering to the Mean of the Two second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraical Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease; and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences

ferences standing on each Side of the Interval to be interpolated, is to be accounted the mean second Difference; the Correction corresponding to it by Table Page 11, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the Four given Latitudes change their Denomination, call the second Latitude $+$, and those of a contrary Denomination $-$.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2\frac{1}{2}'$, this may be neglected on most Occasions: but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page 7, and 8, viz. the Moon's right Ascension, her Semidiameter, horizontal Parallax, with its Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour, may be found very readily by the Help of the Table of proportional Logarithms at the End of the requisite Tables: For which consult the Explanation of those Tables.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of the Month, as well as in the Appulses to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an Eclipse of the Sun, or an Occultation of a Star or Planet by the Moon observed: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the Ephemeris shews the Error of the Tables, whatever it be at that Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The logistic Logarithms of the Moon's Parallax, serve further to facilitate the Calculations of Parallaxes, but if the Table of proportional Logarithms at the End of the requisite Tables be made use,

of, which will be most convenient; the constant Quantity 0.4771 must be added to the logistic Logarithms of the Moon's horizontal Parallax contained in the Ephemeris of 1767, to reduce them to proportional Logarithms. It will be more convenient to substitute proportional Logarithms of the Moon's Parallax instead of the logistic Logarithms in a future Ephemeris.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy not being required for the Calculations of Refraction and Parallax. See British Mariner's Guide, Page 57. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper or lower Limb observed at Sea. See British Mariner's Guide, Page 93. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, though no Altitude of the Sun or a Star was taken for regulating the Time. See British Mariner's Guide, Page 61.

The Distances of the Moon from the Sun and fixed Stars, contained in the Four last Pages of the Month, are set down to every Three Hours of Apparent Time by the Meridian of Greenwich, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the same Distances observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that there is Room to hope, by future Improvements of the lunar Tables, and the Introduction of a more accurate Method of constructing Instruments, it may be carried to a much higher Degree of Perfection.

The Moon's Distance are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun

are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120° . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the Ephemeris, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90 and 120° Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural tendency to correct each other; for that small Error which arises from the lunar Tables will affect the Result from either Star equally. But the Error of Mr. Mayer's last lunar Tables here made use of, scarce ever exceeding $1'$ at the most, and seldom amounting to $20''$. the Uncertainty hence arising in the Determination of the Longitude can scarcely exceed half a Degree, and generally will not exceed 10 Miles.

The Distances set down in the Ephemeris, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the Ephemeris, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of Greenwich; and direct his Sight to the East or West of the Moon, according as the Distance at Greenwich is found in Page 9 and

10, or in Two last Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at Greenwich is estimated nearly by turning the supposed Longitude from Greenwich into Time, by Table Page 6, 7, and 8, and adding it to or subtracting it from the Apparent Time at the Ship, as its Longitude is West or East of Greenwich. It will be sufficient if the Distance be computed from the Ephemeris within 10' or 20' for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixed Stars; namely, in determining the Longitude by Comparison with the corresponding Distances observed at Sea, will be shewn hereafter in its proper Order, in the Dissertation explaining the Method of computing the Longitude at Sea by the Help of the Ephemeris.

The Distances contained in the Ephemeris were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shewn for computing the Moon's Latitude, Page 17—19: Except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{4}$ of the Mean of the Two second Differences, and at the first and third Quarter of the Interval was taken $\frac{3}{4}$ of the Correction just found at the Middle of the Interval; instead of consulting Table Page 11, which would however have given the same Result. But, at the first 12 Hours when the Distances of the Moon from a Star begin, and the last 12 Hours when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir Isaac Newton's Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. Phil. Nat. Princ. Math. Page 486. Edit. ult.

From Four Distances at Noon and Midnight computed strictly, to interpolate Three Distances at the 3d, 6th, and 9th Hour of the first or last Interval.

Subtract

Subtract each Distance from the following, for the first Differences, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following one of the same Order, for the second Differences: And in like Manner subtract the first 2d Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b , the first or last second Difference by c ; according as the Interpolation to be made is for the first or last 12 Hours, denote also the third Difference by d ; and, a being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

At 3d Hour of first Interval	$a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d$
At 6th Hour of first Interval	$a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$
At 9th Hour of first Interval	$a + \frac{3}{4}b - \frac{3}{32}c + \frac{5}{128}d$
Or	
At 3d Hour of last Interval	$a + \frac{1}{4}b - \frac{3}{32}c - \frac{5}{128}d$
At 6th Hour of last Interval	$a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$
At 9th Hour of last Interval	$a + \frac{3}{4}b - \frac{3}{32}c - \frac{7}{128}d$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b , c or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a Mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or 6th Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

[illegible][illegible][illegible]

A
CORRECT and EASY METHOD
OF CLEARING THE
APPARENT DISTANCE of the MOON
FROM
A STAR or the SUN
OF THE
EFFECTS of REFRACTION and PARALLAX,
By the Help of THREE TABLES.
By NEVIL MASKELYNE,
ASTRONOMER ROYAL.

Year	Month	Day	Time	Place	Remarks
1880	Jan	1	10:00	London	Arrived
1880	Jan	2	11:00	London	Departed
1880	Jan	3	12:00	London	Arrived
1880	Jan	4	13:00	London	Departed
1880	Jan	5	14:00	London	Arrived
1880	Jan	6	15:00	London	Departed
1880	Jan	7	16:00	London	Arrived
1880	Jan	8	17:00	London	Departed
1880	Jan	9	18:00	London	Arrived
1880	Jan	10	19:00	London	Departed
1880	Jan	11	20:00	London	Arrived
1880	Jan	12	21:00	London	Departed
1880	Jan	13	22:00	London	Arrived
1880	Jan	14	23:00	London	Departed
1880	Jan	15	24:00	London	Arrived
1880	Jan	16	25:00	London	Departed
1880	Jan	17	26:00	London	Arrived
1880	Jan	18	27:00	London	Departed
1880	Jan	19	28:00	London	Arrived
1880	Jan	20	29:00	London	Departed
1880	Jan	21	30:00	London	Arrived
1880	Jan	22	31:00	London	Departed
1880	Jan	23	32:00	London	Arrived
1880	Jan	24	33:00	London	Departed
1880	Jan	25	34:00	London	Arrived
1880	Jan	26	35:00	London	Departed
1880	Jan	27	36:00	London	Arrived
1880	Jan	28	37:00	London	Departed
1880	Jan	29	38:00	London	Arrived
1880	Jan	30	39:00	London	Departed
1880	Jan	31	40:00	London	Arrived

TABLE

[3]
TABLE I.

App. Alt. of Star.	Loga- rithm.	Dif.	App. Alt. of Star.	Loga- rithm.	Dif.	App. Alt. of Star.	Loga- rithm.	Dif.
0 0	2,0713	—	0 0	1,9906	—	0 0	1,9776	—
3 0	2,0638	75	9 0	1,9901	5	35	1,9776	10
3 10	2,0572	66	9 10	1,9896	5	36	1,9775	10
3 20	2,0512	60	9 20	1,9892	4	37	1,9775	10
3 30	2,0459	53	9 30	1,9888	4	38	1,9774	10
3 40	2,0411	48	9 40	1,9884	4	39	1,9774	10
3 50	2,0367	44	9 50	1,9880	4	40	1,9774	10
4 0	2,0328	39	10 0	1,9870	10	41	1,9773	10
4 10	2,0292	36	10 30	1,9861	9	42	1,9773	10
4 20	2,0259	33	11 0	1,9853	8	43	1,9773	10
4 30	2,0229	30	11 30	1,9846	7	44	1,9772	10
4 40	2,0202	27	12 0	1,9840	6	45	1,9772	10
4 50	2,0178	24	12 30	1,9835	5	46	1,9772	10
5 0	2,0156	22	13 0	1,9830	5	47	1,9771	10
5 10	2,0134	22	13 30	1,9825	5	48	1,9771	10
5 20	2,0115	19	14 0	1,9821	4	49	1,9771	10
5 30	2,0096	19	14 30	1,9818	3	50	1,9771	10
5 40	2,0080	16	15 0	1,9812	6	51	1,9771	10
5 50	2,0063	17	16 0	1,9807	5	52	1,9771	10
6 0	2,0049	14	17 0	1,9802	5	53	1,9771	10
6 10	2,0035	14	18 0	1,9799	3	54	1,9770	10
6 20	2,0023	12	19 0	1,9795	4	55	1,9770	10
6 30	2,0010	13	20 0	1,9793	2	56	1,9770	10
6 40	2,0000	10	21 0	1,9791	2	57	1,9770	10
6 50	1,9989	11	22 0	1,9789	2	58	1,9770	10
7 0	1,9980	9	23 0	1,9787	2	59	1,9770	10
7 10	1,9971	9	24 0	1,9785	2	60	1,9770	10
7 20	1,9963	8	25 0	1,9784	1	61	1,9770	10
7 30	1,9954	9	26 0	1,9782	2	62	1,9770	10
7 40	1,9947	7	27 0	1,9781	1	63	1,9770	10
7 50	1,9940	7	28 0	1,9781	0	64	1,9770	10
8 0	1,9934	6	29 0	1,9779	2	65	1,9770	10
8 10	1,9927	7	30 0	1,9779	0	66	1,9769	10
8 20	1,9922	5	31 0	1,9778	1	67	1,9769	10
8 30	1,9916	6	32 0	1,9778	0	68	1,9769	10
8 40	1,9911	5	33 0	1,9777	1	to 90	1,9769	10
8 50	1,9911	5	34 0	1,9777	1			

TABLE

[A 2]

TABLE

TABLE II.

App. Alt. of Sun.	Loga- rithm.	Dif.	App. Alt. of Sun.	Loga- rithm.	Dif.	App. Alt. of Sun.	Loga- rithm.	Dif.
0 0			8 0		+	0		+
3 0	2,0757	63	8 0	2,0041	4	23	2,0067	10
3 10	2,0684	64	8 10	2,0037	5	24	2,0077	9
3 20	2,0620	59	8 20	2,0032	4	25	2,0086	10
3 30	2,0561	51	8 30	2,0028	4	26	2,0096	10
3 40	2,0510	46	8 40	2,0024	4	27	2,0106	10
3 50	2,0464	42	8 50	2,0021	3	28	2,0116	12
4 0	2,0422	37	9 0	2,0018	3	29	2,0128	9
4 10	2,0385	34	9 10	2,0015	3	30	2,0137	11
4 20	2,0351	32	9 20	2,0012	2	31	2,0148	10
4 30	2,0319	28	9 30	2,0010	2	32	2,0158	11
4 40	2,0291	25	9 40	2,0008	2	33	2,0169	10
4 50	2,0266	22	9 50	2,0006	2	34	2,0179	10
5 0	2,0244	20	10 0	2,0004	4	35	2,0189	10
5 10	2,0224	20	10 30	2,0000	2	36	2,0200	9
5 20	2,0204	18	11 0	1,9998	3	37	2,0209	11
5 30	2,0186	17	11 30	1,9995	1	38	2,0220	10
5 40	2,0169	14	12 0	1,9994	0	39	2,0230	10
5 50	2,0155	15	12 30	1,9994	1	40	2,0240	10
6 0	2,0140	12	13 0	1,9995	1	41	2,0250	9
6 10	2,0128	12	13 30	1,9996	0	42	2,0259	10
6 20	2,0116	11	14 0	1,9996	2	43	2,0269	9
6 30	2,0105	11	14 30	1,9998	3	44	2,0278	9
6 40	2,0094	8	15 0	2,0001	6	45	2,0287	9
6 50	2,0086	9	16 0	2,0007	7	46	2,0296	10
7 0	2,0077	7	17 0	2,0014	7	47	2,0306	8
7 10	2,0070	7	18 0	2,0021	9	48	2,0314	9
7 20	2,0063	6	19 0	2,0030	8	49	2,0323	9
7 30	2,0057	6	20 0	2,0038	9	50	2,0332	8
7 40	2,0051	5	21 0	2,0047	10	51	2,0340	9
7 50	2,0046	5	22 0	2,0057	10	52	2,0349	8

TABLE

[5]
TABLE II. continued.

App. Alt. of Sun.	Loga- rithm.	Diff.	App. Alt. of Sun.	Loga- rithm.	Diff.	App. Alt. of Sun.	Loga- rithm.	Diff.
		+			+			+
53	2,0357	8	66	2,0447	5	79	2,0500	3
54	2,0365	7	67	2,0452	5	80	2,0503	2
55	2,0372	8	68	2,0457	5	81	2,0505	2
56	2,0380	7	69	2,0462	5	82	2,0507	2
57	2,0387	7	70	2,0467	5	83	2,0509	2
58	2,0394	8	71	2,0472	4	84	2,0511	1
59	2,0402	7	72	2,0476	4	85	2,0512	1
60	2,0409	7	73	2,0480	4	86	2,0513	1
61	2,0416	6	74	2,0484	4	87	2,0514	0
62	2,0422	7	75	2,0488	3	88	2,0514	0
63	2,0429	6	76	2,0491	4	89	2,0515	0
64	2,0435	6	77	2,0495	3	90	2,0515	
65	2,0441	6	78	2,0498	2			

TABLE

TABLE III.

Ap. Al. of D, * or O			Dif.	Ap. Alt. of D, *, or O			Dif.	Ap. Al. of D, * or O			Dif.
			—				—				—
° 1	1	11	11	8 0	6 33	1	11	0	1	11	11
3 0	14 36	32	32	8 10	6 26	7	7	23	2 26	7	7
3 10	14 4	30	30	8 20	6 19	7	7	24	2 19	5	5
3 20	13 34	28	28	8 30	6 12	7	7	25	2 14	5	5
3 30	13 6	26	26	8 40	6 5	7	7	26	2 9	4	4
3 40	12 40	25	25	8 50	5 59	6	6	27	2 5	4	4
3 50	12 15	24	24					28	2 1	4	4
4 0	11 51	22	22	9 0	5 53	6	6	29	1 57	4	4
4 10	11 29	21	21	9 10	5 47	6	6	30	1 53	3	3
4 20	11 8	20	20	9 20	5 41	6	6	31	1 50	3	3
4 30	10 48	19	19	9 30	5 35	5	5	32	1 47	3	3
4 40	10 29	17	17	9 40	5 30	5	5	33	1 44	2	2
4 50	10 12	17	17	9 50	5 25	5	5	34	1 42	3	3
5 0	9 55	16	16	10 0	5 20	15	15	35	1 39	2	2
5 10	9 39	16	16	10 30	5 5	13	13	36	1 37	3	3
5 20	9 23	14	14	11 0	4 52	12	12	37	1 34	2	2
5 30	9 9	14	14	11 30	4 40	11	11	38	1 32	2	2
5 40	8 55	13	13	12 0	4 29	10	10	39	1 30	2	2
5 50	8 42	13	13	12 30	4 19	10	10	40	1 28	1	1
6 0	8 29	12	12	13 0	4 9	9	9	41	1 27	2	2
6 10	8 17	11	11	13 30	4 0	8	8	42	1 25	2	2
6 20	8 6	11	11	14 0	3 52	7	7	43	1 23	1	1
6 30	7 55	11	11	14 30	3 45	8	8	44	1 22	2	2
6 40	7 44	10	10	15 0	3 37	13	13	45	1 20	1	1
6 50	7 34	10	10	16 0	3 24	11	11	46	1 19	1	1
7 0	7 24	9	9	17 0	3 13	10	10	47	1 18	1	1
7 10	7 15	9	9	18 0	3 3	9	9	48	1 17	2	2
7 20	7 6	9	9	19 0	2 54	9	9	49	1 15	1	1
7 30	6 57	8	8	20 0	2 45	7	7	50	1 14	1	1
7 40	6 49	8	8	21 0	2 38	7	7	51	1 13	1	1
7 50	6 41			22 0	2 31			52	1 12		

TABLE

T A B L E III. continued.

Ap. Al. of D, * or ⊙		Diff.	Ap. Al. of D, * or ⊙		Diff.	Ap. Al. of D, * or ⊙		Diff.
°	'	"	°	'	"	°	'	"
53	1	11	66	1	2	79	0	58
54	1	10	67	1	2	80	0	58
55	1	9	68	1	1	81	0	58
56	1	9	69	1	1	82	0	57
57	1	8	70	1	1	83	0	57
58	1	7	71	1	0	84	0	57
59	1	6	72	1	0	85	0	57
		0			0			0
60	1	6	73	1	0	86	0	57
61	1	5	74	0	59	87	0	57
62	1	4	75	0	59	88	0	57
63	1	4	76	0	59	89	0	57
64	1	3	77	0	58	90	0	57
65	1	3	78	0	58			
		1			0			0

EXPLA:

EXPLANATION

OF THE

USE of the foregoing TABLES, in clearing the Distance of the MOON observed from a STAR or the SUN'S Centre of the Effects of Refraction and Parallax.

INTRODUCTION.

THE Method here exhibited is an Improvement of that which I have given formerly in the British Mariner's Guide * and Philosophical Transactions, by means of Three Tables of ready Use, the First and Third only of which are to be employed, if the Moon's Distance was taken from a Star, and the Second and Third if the Moon's Distance was taken from the Sun.—In the Second Table the Effect of the Sun's Parallax is allowed for. These Tables are carried so low as the Altitude of Three Degrees, and might be carried with equal Ease down to the Horizon; but that it is not thought safe to make use of Observations where the Celestial Objects are lower than here stated on account of the Variableness and Uncertainty of the Horizontal Refractions. Indeed it is adviseable not to make use of Altitudes lower than 5° , except in case of Necessity: And if there is Opportunity to take them higher, it will be still better.

* See British Mariner's Guide, chap. V. and Philos. Transf. Vol. LII. Part II. for 1762, p. 565, 566. and Vol. LIV. for 1764. p. 263.

Table I. contains a Logarithm to be taken out with the Star's apparent Altitude.

Table II. contains a Logarithm to be taken out with the Sun's apparent Altitude. And,

Table III. contains a Number of Minutes and Seconds to be taken out with the Moon's apparent Altitude, and the Star's (or Sun's) apparent Altitude.—The Rules to be followed in making the Calculations are these :

P R E C E P T S.

I. To the Log. Tangent of half the Difference of the apparent Altitudes of the Moon and Star (or Sun) add the Log. Co-tangent of half the Sum of the same, and rejecting 10 from the Index, you will have the Log. Tangent of Arc the First.

II. To the Log. Tangent of Arc the First, just found, add the Log. Co-tangent of half the Distance of the Moon and Star (or Sun), and, rejecting 10, you will have the Log. Tangent of Arc the Second.

III. If the Star's (or Sun's) Altitude is greater than the Moon's, take the Sum of Arc 2d and half the Distance of the Moon and Star (or Sun); but if the Moon's Altitude is greatest, take the Difference of Arc 2d and half the Distance, and you will have Arc the 3d.

IV. To the Log. Tangent of Arc 3d add the Log. Tangent of the Moon's apparent Altitude; the Sum, rejecting 10 from the Index, is the Log. Cosine of Arc 4th.

V. With the Star's apparent Altitude, take a Logarithm out of Table I. or with the Sun's app. Alt. take a Logarithm out of Table II. according as the Moon's Distance was taken from a Star or the Sun; the Logarithm thus found, added up together with the Co-tan. of double Arc the first, and the Sine of double Arc the second, rejecting 20 from the Index, gives the proportional Log. of the Effect of Refraction, or first Correction of Distance, which is always to be added to the observed Distance.

VI. To the Logarithm taken out of Table I. (or II.) add the constant Logarithm 0,3010, and the Log. Sine of the Moon's apparent Altitude; the Sum, rejecting 10 from the Index, is the proportional Logarithm of a Number of Minutes and Seconds, to be reserved.

VII. Enter Table III. with the Moon's apparent Altitude, and take out a Number of Minutes and Seconds, which subtract from the Moon's horizontal Parallax, and you will have the Moon's horizontal Parallax diminished; to which add the reserved Number found under the preceding Article, and you will have the Moon's horizontal Parallax corrected.

VIII. To the proportional Logarithm of the Moon's horizontal Parallax corrected, add the Log. Co-secant of the Moon's apparent Altitude and Log. Co-tangent of Arc 3d; the Sum, abating 20 from the Index, is the proportional Logarithm of the principal Effect of Parallax, or 2d Correction of Distance; which is always to be subtracted from the observed Distance corrected for Refraction, except the Moon's Altitude be greater than that of the Star (or Sun) and at the same time Arc 2d be greater than half the Distance, in which Case it is to be added.

IX. To the constant Log. 1.5820 add the Log. Tangent of Distance of the Moon from the Star (or Sun) twice corrected, double the Secant of the Moon's Altitude, double the Co-secant of Arc 4th, and double the proportional Logarithm of the Moon's horizontal Parallax diminished; the Sum, rejecting 30 from the Index, is the proportional Logarithm of the 3d Correction of Distance; and is always to be added to the Distance of the Star or Sun from the Moon's Centre twice corrected, except the Distance exceeds 90°, in which Case it is to be subtracted.

X. Now enter Table III. with the Star's (or Sun's) Altitude, and take out the corresponding Number; then to the proportional Log. of the Third Correction (found by the preceding Article) add the Log. Cosine of the apparent Distance twice corrected, the proportional Logarithm of double the Number just taken out of Table III. and the arithmetical Complement of the proportional Logarithm of the Moon's horizontal Parallax diminished (found by Article VII.) The Sum of these Four Logarithms, rejecting 20 from the Index, is the proportional Logarithm of the Fourth and last Correction of Distance, and is always to be added to the Distance of the Star or Sun from the Moon's Centre thrice corrected.

These Four Corrections being applied, according to the Rules, to the apparent Distance of the Moon from the Star or the Sun's Centre, the true Distance will be obtained clear of the Effects of Refraction and Parallax.

Example.

Example.

Let there be given

The apparent Distance of Moon from Star $43^{\circ} 35' 42''$ the
 Δ 's horizontal Parallax $54' 42''$.

App. Alt. of Star 11 17

App. Alt. of Δ 9 38

Difference — 1 39

Sum — 20 55

$\frac{1}{2}$ Diff. — 0 49 Tang. 8.1539

$\frac{1}{2}$ Sum — 10 28 Cotang. 10.7334

Arc 1st — 4 25 Tang. 8.8873

$\frac{1}{2}$ Diff. Δ à $\star$ 21 48 Co-tang. 10.3980

Arch 2d 10 55 Tang. 9.2853

Arc 3d — 32 43 Tang. 9.8078

The Moon's Alt. 9 38 Tang. 9.2298

Arc 4th Cosine 83 44 Cosine 9.0376

Tab. I. with $\star$'s Alt. $11^{\circ} 17'$ 1.9857 — — 1.9857

Double Arc first $8^{\circ} 50'$ Co-t. 10.8086 Conf. Log. (of 2) 0.3010

Double Arc 2d $21^{\circ} 50'$ Sine 9.5704 Sine Δ 's Alt. $9^{\circ} 38'$ 9.2236

Pr. Log. of the Effect of 2.3647 Pr. Log. $5' 33'',5$ 1.5103

Refraction = $46'',6$ =

reserved N°

Δ 's horizontal Parallax — $54^{\circ} 42'$
 Tab. III with Δ 's Alt. $9^{\circ} 38'$ Subt. $5^{\circ} 31'$

Δ 's horiz. Parallax diminished $49^{\circ} 11'$
 Reserved Number — add — $5^{\circ} 33.5'$

Δ 's horizontal Parallax corrected $54^{\circ} 44.5'$ - Pr. Log. 0.5170
 Δ 's Alt. $9^{\circ} 38'$ Co-secant 10.7764
 Arc 3d = $32^{\circ} 43'$ Co-tang. 10.1922

Proport. Log. of Parallax in Distance $5^{\circ} 53''.0$ 1.4856

Constant Log. — — — 1.5820
 Tang. Dist. of Δ à St. twice corrected $43^{\circ} 30'$ 9.9772
 Twice Secant of Moon's Alt. $9^{\circ} 38'$ — — — 20.0124
 Twice Co secant of Arc 4th, 83.44 — — — 20.0052
 Twice Proport. Log. of Moon's horizont. Parallax
 diminished, $49^{\circ} 11''$ — — — 1.1268

The Sum (rejecting 30) is Prop. Log. of 3d Cor-
 rection $21''.5$ — — — 2.7036
 Cosine Dist. 43.30 — — — 9.8605
 Prop. Log. of $4^{\circ} 45'' \times 2 = 9^{\circ} 30''$ — — — 1.2775
 Ar. Compl. Prop. Log. Δ 's horiz. Par. diminished
 $49^{\circ} 11''$ — — — 9.4366

Prop. Log. 4th Correction $5''.5$ — — — 3.2782

Hence Δ 's apparent Distance from Star — $43^{\circ} 35' 42''$
 First Correction — — — + $0^{\circ} 46.6'$
 Second Correction — — — — $5^{\circ} 53.0'$

Δ 's Distance twice corrected — — — $43^{\circ} 30' 35.6''$
 Third Correction — — — + $21.5''$
 Fourth Correction — — — + $5.5''$

True Distance of Δ from Star — — — $43^{\circ} 31' 2.6''$

Appendix to the foregoing Rules, containing Two other small Corrections, which may be acceptable to the curious and nicer Calculators, or useful on particular Occasions where the utmost Accuracy is required; though not recommended as necessary for general Practice, and are therefore here placed by themselves, that they may be either used or neglected, as may be thought most convenient.

1. The Effect of Refraction found by Article IV. will be rendered more exact, if it be corrected according to the Heights of the Barometer and Thermometer at the Time of the Observation, by the Precepts given p. 49 of the *Tables requisite to be used with the Nautical Ephemeris*.

2. In Strictness, there is also a Second Correction of Refraction similar to that of Parallax or Correction 3d of Distance, which however cannot exceed $2''\frac{1}{2}$ if the Altitude of the Star be 5° , or $5''$ if its Altitude be 3° , the Distance of the Moon from the Star being supposed 20 Degrees. However, if required, it may be easily computed, as follows: To the Proportional Logarithm of the Second Correction of Parallax, or 3d Correction of Distance, add double the Proportional Logarithm of the Number taken out of Table III. with the Star's Altitude, (according to Article X.) and the arithmetical Complement of double the Proportional Logarithm of the Moon's horizontal Parallax *diminished*; the Sum, abating 10 from the Index, is the Proportional Logarithm of the Second Correction of Refraction, which always apply to the Distance corrected by the foregoing Rules, with the same Sign as the 2d Correction of Parallax or the 3d Correction, viz. always add it, except the Distance exceeds 90° , when you must subtract it.

Example.

1. Suppose the Height of the Barometer at the Time of taking the Observations of the foregoing Example was 30,6 Inches, and the Height of Fahrenheit's Thermometer 20 Degrees. The Effect of Refraction computed for a mean State of the Air by Article IV. and found above $46''\text{,}6$ when corrected according to p. 49 of the Requisite Tables, will be increased $5''$, or become $51''\text{,}6$, which should be applied instead of $46''\text{,}6$.

2. The

2. The prop. Log. of 3d Corr. 21",5	2. 703
Double prop. Log. of N°. taken out of Tab. III. with	
Star's Alt. 4' 45"	3. 157
Ar. Compl. double prop. Log. of D's hor. Par. di-	
min. 49' 11"	8. 873

The Sum, rejecting 10 4. 733
is prop. Log. of the 2d Correction of Refraction, which is here under a Second, and therefore may be neglected. The true Distance of the Moon from the Star will therefore be found as follows:

Observed Distance of the Moon from the Star	43 35 42
First Correction	+ 0 51,6
Second Correction	- 5 53,0
Moon's Distance twice corrected	43 30 40,6
Third Correction	+ 21,5
Fourth Correction	+ 5,5
Fifth Correction	0
True Distance of the Moon from the Star	43 31 7,6

Investigation.

In the Spherical Triangle ZLS, Z represents the Zenith, L the apparent Place of the Moon as affected by Refraction and Parallax, and S the apparent Place of the Star as affected by Refraction, or the apparent Place of the Sun as affected by Refraction and Parallax. Let l represent the true Place of the Moon, and s the true Place of the Star or Sun, Ll being the Difference of the Moon's Refraction and Parallax in Altitude, and Ss the Star's Refraction, or the Difference of the Sun's Refraction and Parallax. Let ZP , lb , and sd be Arches perpendicular to LSi , and let la be an Arch of a parallel Circle described from the Pole d ; on the Arch ld produced if necessary let fall the Perpendicular sc , and from l as a Pole describe a parallel Circle se : Then ls the true Distance of the Moon from the Star or Sun is $= ls = ld + dc + ce = bd + ab + dc + ce = LS - Lb + Sd + ab + dc + ce$.

Let $Lf = lo$ be equal to the Moon's Refraction in Altitude, then Lo will be the Moon's Parallax in Altitude: From f and o draw fq , on perpendicular to LS . $Lb = Ll \times \text{Cof. } ZLS = Lo - lo \times \text{Cof. } ZLS = Lo - Lf \times \text{Cof. } ZLS = Ln - Lq$, which being substituted instead of Lb in the Expression above gives

gives $l = LS + Lq + Sd - Ln + ab + de + ee$. This Formula contains five Corrections (for $Lq + Sd$ may be considered as one Correction, and computed together) which applied to the apparent Distance LS will give the true Distance l . The Method of computing these five Corrections will be shewn in Order as follows:

Let Arches 1st, 2d, 3d, and 4th, found by Articles I. II. III. IV. be called A, B, C, D. Put the Moon's horizontal Parallax $= h$, her Parallax in Altitude $= p$, and Refraction in Altitude $= r$, the Star's Refraction in Altitude, or the Difference of the Sun's Refraction and Parallax in Altitude $= s$; all expressed in Parts of a Circle to the Radius Unity. It is evident that Arcs the 1st and 2d, or A and B, found by Articles I. and II. are the same with Arcs the first and second found by the Rule for Refraction, Phil. Trans. Vol. 54. p. 264. and that C is $= LP$, and D $= ZLS$. It is also evident from what is there demonstrated, that if the Refraction in Altitude at any Zenith Distance Z was equal to $x \times \tan. Z$, x being the Refraction at the Altitude of 45° , that the total Effect of Refraction in contracting the Distance of the Moon and Star would be expressed by $\frac{2x \times \tan. 2A}{\sin. 2B}$. Now if the Moon's

Refraction Lf was to the Star's Refraction Ss , as the Tangent of ZL to the Tangent of ZS , the Refractions both of the Moon and Star would be the same as if the Refraction at the Altitude of 45° was $= Ss \times \cot. ZS$, which put $= x$, and the Refraction at any other Zenith Distance $Z = x \times \tan. Z$, and consequently $Lq + Sd$, the total Effect of Refraction in contracting the Distance of the Moon and Star would be equal to $\frac{2x \times \tan. 2A}{\sin. 2B} = \frac{2Ss \times \cot. ZS \times \tan. 2A}{\sin. 2B}$. The propor-

tional Log. of $2x = 2Ss \times \cot. ZS$, is contained in Table I. therefore the Effect of Refraction will be found by Article V. But if the Moon's Distance was taken from the Sun, then Ss will represent the Diff. of the Sun's Refraction and Parallax in Alt. and the Moon's Refraction being supposed to be to Ss as the Tangent of ZL to the Tang. of ZS , and x being taken $= Ss \times \cot. ZS$ as before, $Lq + Sd$, the total Effect of Refraction and the Sun's Parallax would be $= \frac{2x \times \tan. 2A}{\sin. 2B}$. The pro-

portional Logarithm of $2x = 2Ss \times \cot. ZS$ in this Case is expressed in Table II. Therefore the total Effect of Refraction, together with the Sun's Parallax, will be found by Article V.

To

To find L_n ,

Hitherto the Moon's Refraction L_f has been supposed to be to S as the Tangent of ZL to the Tangent of ZS ; and consequently, as F the Refraction at any Altitude is universally $= 57'' \times \tan. Z - 3 F$, the Moon's Refraction will be taken too great or too little for the Truth, according as ZL is greater or less than ZS ; therefore as Parallax depresses the Moon while Refraction raises her, add or subtract the Error of the Moon's supposed Refraction to or from the Moon's Parallax in Altitude, and the Error will be corrected; or which comes to the same Thing, instead of p the Moon's Parallax in Altitude universally use $p + x \times \cot. ZS \times \tan. ZL - r = p + x \times \tan. ZL - r$, which I call the Moon's Parallax in Altitude corrected, and may be now represented by L_o in the Figure. And L_n will be the 2d Correction of Distance $= L_o \times \cot. ZLS$

$$= \frac{p + x \times \tan. ZL - r}{\tan. LZ} \times \frac{\tan. LP}{\tan. LZ} \quad (\text{or for } p \text{ substituting its}$$

$$\text{Equal } h \times \sin. ZL) = \frac{h \times \sin. ZL + x \times \tan. ZL - r \times \tan. LP}{\tan. ZL}$$

$= h + x \times \sec. ZL - r \times \csc. ZL \times \cot. ZL \times \tan. C$.
Now the proportional Logarithm of $2x$ being contained in Table I. or II. and 0.3010 being the Logarithm of 2, the proportional Logarithm of $x \times \sec. ZL$ or the reserved Number will be found by Article VI. Table III. if entered with the Moon's Altitude, gives the Value of $r \times \csc. ZL$; therefore $h - r \times \csc. ZL + x \times \sec. ZL$ will be found by Articles VI. and VII. and this I call the Moon's horizontal Parallax corrected.

To find ab ,

Put $h - r \times \csc. ZL = k$, which call the Moon's horizontal Parallax diminished. It appears by what is shewn Phil. Transf. Vol. 54. p. 273. that $ab = \frac{lb^2}{2 \tan. LS} = \frac{L^2 \times \sin. ZLS^2}{2 \tan. LS}$
 $= \frac{p - r^2 \times \sin. D^2}{2 \tan. LS}$ (which becaufe $p - r = k \times \sin. ZL - r$
 $= h - r \times \csc. ZL \times \sin. ZL = k \times \sin. ZL) = \frac{l^2 \times \sin. ZL^2}{2 \tan. LS}$
 $\times \sin. D^2$; whose proportional Logarithm is found by Article IX.

To

To find dc .

The Angles $ds c$, $id c$, having the same Angle sdc for their Complement to a right Angle, are equal to one another, also to $ld b$, and consequently $dc = s d \times \text{Sin. } ds c = \frac{s d \times l b}{\text{Sin. } ld}$

$= \frac{S_s \times \text{Sin. ZSL} \times L l \times \text{Sin. ZLS}}{\text{Sin. } ld}$. But ab was found above $= \frac{L l^2 \times \text{Sin. ZLS}^2}{2 \text{ Tan. } ld}$. Therefore $dc : ab :: \frac{S_s \times \text{Sin. ZSL} \times L l}{\text{Sin. } ld}$

$\times \text{Sin. ZLS} : \frac{L l^2 \times \text{Sin. ZLS}^2}{2 \text{ Tan. } ld} :: 2 S_s \times \text{Sin. ZSL} \times \text{Tan. } ld : L l \times \text{Sin. ZLS} \times \text{Sin. } ld :: 2 S_s \times \text{Sin. ZL} : L l \times \text{Sin. ZS} \times \text{Cof. } ld$. Therefore $dc = \frac{ab}{\text{Cof. } ld} \times \frac{2 S_s}{\text{Sin. ZS}} \times \frac{\text{Sin. ZL}}{L l}$

which putting u to express the Value of $\frac{S_s}{\text{Sin. ZS}}$ viz. the N^o. taken out of Table III. with the Star's Altitude, will be $= \frac{ab}{\text{Cof. } ld} \times \frac{2u}{k}$, whence dc is rightly found by Article X.

To find ce .

ce the second Correction of Refraction mentioned in the Appendix is $= \frac{s c^2}{2 \text{ Tan. } lc}$ nearly $= \frac{s d^2}{2 \text{ Tan. } ld} = S_s^2 \times \frac{\text{Sin. ZSL}}{2 \text{ Tan. } ld}$

Therefore $ce : ab :: S_s^2 \times \text{Sin. ZSL}^2 : L l^2 \times \text{Sin. ZLS}^2 :: S_s^2 \times \text{Sin. ZL}^2 : L l^2 \times \text{Sin. ZS}^2$. Therefore $ce = ab \times \frac{S_s^2}{\text{Sin. ZS}^2} \times \frac{\text{Sin. ZL}^2}{L l^2} = ab \times \frac{u^2}{k^2}$. Q. E. I.

[C]

PROBLEM.

P R O B L E M.

Given the apparent Altitudes of the Centers of the Moon and Sun (or a known fixt Star) together with the apparent Distance of their Centers : To find the true Distance of their Centers at the Time of Observation, and from thence the Difference of Longitude between Greenwich and the Place of Observation. By Mr. George Witchell.

S O L U T I O N.

1st, From the proportional Logarithm of the Moon's horizontal Parallax (its Index being increased by ten) subtract the logarithmic Sine of the Moon's Zenith Distance, and the Remainder is the proportional Logarithm of her Parallax in Altitude ; from which subtracting the Moon's Refraction, the Difference will be the Correction of the Moon's Altitude, or (which is the same) the Correction of her Zenith Distance.

2d, Add together the logarithmic Tangents of half the Sum, and half the Difference of the apparent Zenith Distances of the Sun and Moon, and the logarithmic Co-tangent of half the observed Distance the Sum (rejecting twice the Radius) is the logarithmic Tangent of an Arc, which call A.

3d, When the Sun's Zenith Distance is less than the Moon's, the Difference between the Arc A and half the observed Distance is to be taken, otherwise their Sum, and the Refraction corresponding to the Complement of this Sum or Difference, will be the first Correction of the observed Distance.

4th, If the Difference of the Arc A and half the observed Distance was used in the preceding Rule, let their Sum be now taken, otherwise their Difference, and to the logarithmic Co-tangent of that Sum, or Difference, add the logarithmic Tangent of the Moon's Zenith Distance, and the proportional Logarithm of the Correction of her Zenith Distance, and the Sum (rejecting twice the Radius) will be the proportional Logarithm of the second Correction of the observed Distance.

5th, If the Arc A is less than half the observed Distance, the first Correction is always to be added to, and the second subtracted from, the observed Distance—But when the Arc A is greater than half the observed Distance, both the first and second Corrections must be added if the Sun's Zenith Distance is greater than the Moon's, otherwise both must be subtracted, and these two Corrections being applied gives the corrected Distance of the Sun and Moon.

6th,

6th, Add together the proportional Logarithms of the Sum and Difference of the Correction of the Moon's Zenith Distance, and the second Correction of the observed Distance, the logarithmic Tangent of the corrected Distance and the constant Logarithm 9.8045—The sum of these four Logarithms (rejecting twice the Radius) will be the proportional Logarithm of the third Correction of the observed Distance (expressed in Seconds and Thirds) to be added when the corrected Distance is less than a Quadrant, otherwise subtracted, and the Sum or Difference will be the true Distance required; which being obtained, the Longitude will be found by the Rules given in the Requisite Tables.

N. B. If the Distance of the Moon from a known fixt Star is observed, the preceding Rules will require no other Alteration than reading Star instead of Sun.

E X A M P L E I.

1769 March 18th	App. Time.	Diff. D à Pollux.	D Altit.	Star's Alt.	H. P. D
—	8 ^h 38' 00"	29° 24' 46" W	49° 57'	64° 19'	57' 8"
Log. Si. D Zen. Dist.	—	D Zen. Dist.	0'		
Hor. Parall. of the D 57' 8" p. l. 0. 4984	—	Star's Zen. Dist.	40 3		
		Sum	25 41		
Parall. in Alt.	36 46 p. l. 0. 6899	Difference	65 44	Sum	0' 32 52 t. 9. 8103
		Observed Distance	29 24 46	Diff.	7 11 t. 9. 1005
D's Refraction —	0 48	1st Correction	—	Diff.	14 42 1' 10. 5811
Corr. D's Zen. Dist. 35 58		2d Correction	—	Arc A	17 15 t. 9. 4919
		Corrected Dist.	28 58	Diff.	2 33 Compl. 87° 27'
		3d Correction	+	Sum	31 57 t. 10. 2050
		True Dist.	28 58 11	D's Zen. Dist.	40 3 t. 9. 9246
		Dist. at 6 Hor.	27 34 17	Cor. Z. D. D	35' 58" p. l. 0. 6994
		Dist. at 9 Hor.	29 7 57	2d Correction	26' 41" p. l. 0. 8290
p. l. — 0. 3315		1st Diff.	1 23 54	Sum	1° 2' 39 p. l. 0. 4584
p. l. — 0. 2837		2d Diff.	1 33 40	Diff.	0 9 17 p. l. 1. 2875
				Corr. Dist.	28 58 t. 9. 7431
				Constant Log.	9. 8045
p. l. — 0. 0478		Time after 6 Hor.	0' 1" 14	3d Correction	9" 9" 1. 2935
		Time at Greenwich	8 41 14		
		Time at Portsmouth	8 38 0		
		Diff. Longit. W.	0 3 14		
		True Diff. Long.	0 4 26		
		Error of Observat.	0 1 12		

Equal to 18 Geographical Miles

E X A M P L E II.

1769 March 18th, 10^h 25' 36" p.m. App. Time. Diff. D à Spica. D Altit. St. Altit. Hor. Par. D

1" 6	—	71 18	0	47° 42'	18° 42'	57' 6"
57 6	—	10.4986	71 18			
	—	—9.8280	D 42 18			
38 26	—	0.6706	113 36	—	56 48	—
—0 52	—		29 0	—	14 30	—
37 34	—		62 23 59 1/2	—	31 12	—
	—		+1 58 A	—	33 8	—
	—		+1 24	—	64 20	—
	—		62 27 21	—	1 56	—
	—		+6	—	42 18	—
9 Hor. —	—		62 27 27	—	37' 34"	p. l.
12 Hor. —	—		63 16 24	—	1' 24"	p. l.
	—		61 38 11	—		2.1111
5655 —	—		0 48 57	—	38 58	p. l.
2631 —	—		1 38 13	—	36 10	p. l.
3024 —	—		10 29 43	—	62° 27	t.
	—		10 25 36	—		9.8045
	—		4 7	—	West 6" 24" —	—1.4487
	—		4 26	—		
	—		0 19	—	Error Obs. = 4 1/2 Miles.	

[21]

Observations on the preceding RULES.

THE foregoing Rules being only an Approximation will sometimes be liable to a small Error, which principally lies in the first Correction; for though the Refractions are nearly proportional to the Tangents of the apparent Zenith Distances of the Objects, yet they not being accurately so, an Error of Ten Miles in Longitude may arise when the Sun is not more than five Degrees above the Horizon, and the Arc on which the first Correction depends amounts to eighty Degrees; but though it is scarce possible that such a Circumstance can ever really occur in Practice, yet it may be proper to shew how not only the first Correction, but also the true Distance of the Objects, may be obtained in any Circumstance whatever; and this may be done as follows:

1. Let the mean Refractions (which are found in page 2d of the Requisite Tables) be reduced to the true by Dr. Bradley's Rule, which is given in the Explanation of the Requisite Tables, page 130.
2. The Difference between the Sun's Parallax in Altitude and his Refraction, will be the Correction of the Sun's Zenith Distance.
3. Find the Correction of the Moon's Zenith Distance, the Arc A, and the Sum or Difference of that Arc, and half the observed Distance by the former Directions in Articles 1, 2, and 3.
4. Instead of taking the Refraction corresponding to the Complement of this Sum or Difference for the first Correction, add together the Log. Tangent of the Sun's apparent Zenith Distance, the Log. Co-tangent of the Sum or Difference above-mentioned, and the proportional Logarithm of the Correction of the Sun's Zenith Distance; and the Sum, rejecting twice the Radius, will be the proportional Logarithm of the first Correction, which is to be applied as the foregoing Rules direct, as are also the second and third Corrections, without any Alteration whatever.
5. If it is desired to obtain the Distance of the Objects true to the nearest Second, it will be necessary to apply a fourth Correction, which will be found by adding together the following four Logarithms; viz.

Half

Half the Sum of the proportional Logarithms of the Sum and Difference of the Correction of the Sun's Zenith Distance and the first Correction.

Half the Sum of the proportional Logarithms of the Sum and Difference of the Correction of the Moon's Zenith Distance and the second Correction.

The Log. Sine of the Distance of the Objects twice corrected;

And the constant Logarithm ————— 9.5029

The Sum, rejecting twice the Radius, will be the proportional Logarithm of the fourth Correction (expressed in Seconds and Thirds) which being always added to the Distance thrice corrected, gives the true Distance sought.

EXAMPLE.

The

[illegible]

The additional Work is all included within the black Lines, and may be either used or neglected without affecting the other Part of the Calculation, which is a very considerable Advantage.

If the above Example had been computed according to the former Precepts, without the additional Calculus, the Error would have been but $8\frac{1}{2}$ Miles in Longitude.

G. WITCHELL.

[D]

Apparent

Apparent Times of the Eclipses of JUPITER'S Third Satellite, for the Year 1771, computed from the NEW TABLES, annexed to the NAUTICAL ALMANAC of the same Year.

Days	H.	M.	S.	Days	H.	M.	S.	Days	H.	M.	S.
FEBRUARY 1771.				7	9	18	45 E.	27	14	3	1 I.
				14	10	1	42 I.	27	17	31	31 E.
3	2	8	18 I.	14	13	18	9 E.	OCTOBER.			
3	5	12	14 E.	21	13	59	56 I.	4	18	6	23 I.
10	6	6	17 I.	21	17	17	10 E.	4	21	35	19 E.
10	9	11	14 E.	28	17	57	49 I.	11	22	9	18 I.
17	10	4	49 I.	28	21	15	50 E.	12	1	38	37 E.
17	13	10	47 E.	JUNE.				19	2	11	53 I.
24	14	3	58 I.	4	21	55	26 I.	19	5	41	41 E.
24	17	10	53 E.	12	1	52	59 I.	26	6	14	4 I.
MARCH.				19	5	50	28 I.	26	9	44	16 E.
3	18	3	33 I.	26	9	48	6 I.	NOVEMBER.			
3	21	11	24 E.	JULY.				2	10	15	36 I.
10	22	3	28 I.	3	13	46	1 I.	2	13	46	7 E.
11	1	12	17 E.	10	17	44	20 I.	9	14	16	24 I.
18	2	3	38 I.	18	1	6	7 E.	9	17	47	15 E.
18	5	13	24 E.	25	5	6	14 E.	16	18	16	29 I.
25	6	3	56 I.	AUGUST.				16	21	47	41 E.
25	9	14	37 E.	1	9	7	0 E.	23	22	15	47 I.
APRIL.				8	13	8	28 E.	24	1	47	19 E.
1	10	4	19 I.	15	17	10	32 E.	DECEMBER.			
1	13	15	52 E.	22	21	13	10 E.	1	2	14	22 I.
8	14	4	35 I.	30	1	16	21 E.	1	5	46	14 E.
8	17	17	0 E.	SEPTEMBER.				8	6	12	25 I.
15	18	4	36 I.	6	1	52	56 I.	8	9	44	31 E.
15	21	17	52 E.	6	5	19	55 E.	15	10	10	0 I.
22	22	4	21 I.	13	5	56	9 I.	15	13	42	23 E.
23	1	18	28 E.	13	9	23	42 E.	22	14	7	23 I.
30	2	3	53 I.	20	9	59	34 I.	22	17	40	1 E.
30	5	18	52 E.	20	13	27	38 E.				
MAY.											
7	6	3	3 I.								

Apparent Times of the Eclipses of JUPITER's Third Satellite, for the Year 1772, by the NEW TABLES in the NAUTICAL ALMANAC of 1771.

Days	H.	M.	S.	Days	H.	M.	S.	Days	H.	M.	S.
MARCH 1772.				JUNE.				OCTOBER.			
3	5	58	54 I.	4	10	8	58 I.	4	6	31	4 I.
3	9	32	51 E.	4	13	41	30 E.	4	9	56	28 E.
10	10	0	36 I.	11	14	7	22 I.	11	10	34	50 I.
10	13	34	36 E.	11	17	39	39 E.	11	13	59	37 E.
17	14	2	33 I.	18	18	5	40 I.	18	14	38	30 I.
17	17	36	32 E.	18	21	37	42 E.	18	18	2	42 E.
24	18	4	38 I.	25	22	4	2 I.	25	18	41	45 I.
24	21	38	33 E.	26	1	35	50 E.	25	22	5	17 E.
31	22	6	35 I.								
APRIL.				JULY.				NOVEMBER.			
1	1	40	28 E.	3	2	2	34 I.	1	22	44	19 I.
8	2	8	24 I.	3	5	34	4 E.	2	2	7	16 E.
8	5	42	14 E.	10	6	1	30 I.	9	2	46	24 I.
15	6	9	56 I.	17	10	0	55 I.	9	6	8	37 E.
15	9	43	43 E.	24	14	1	0 I.	16	6	47	46 I.
22	10	11	10 I.	31	18	1	41 I.	16	10	9	16 E.
22	13	44	48 E.					23	10	48	31 I.
29	14	11	58 I.	AUGUST.				23	14	9	15 E.
29	17	45	28 E.	7	22	3	4 I.	30	14	48	39 I.
				15	2	5	5 I.	30	18	8	41 E.
				22	9	36	22 E.				
				29	13	39	3 E.	DECEMBER.			
MAY.				SEPTEMBER.				7	18	48	10 I.
6	18	12	11 I.					7	22	7	27 E.
6	21	45	33 E.					14	22	47	20 I.
13	22	11	59 I.					15	2	5	48 E.
14	1	45	12 E.	5	17	42	10 E.	22	2	46	23 I.
21	2	11	23 I.	12	21	45	33 E.	22	6	4	3 E.
21	5	44	26 E.	20	1	49	9 E.	29	6	45	20 I.
28	6	10	26 I.	27	5	52	48 E.	29	10	2	10 E.
28	9	43	13 E.								

A TABLE of JUPITER'S Hour-Angles with the Meridian when 8° high, to every Half Degree of his possible Declinations, for the Latitude of Greenwich.

ψ 's Declin. North.	Hour-Angle from Merid. in Time.	ψ 's Declin. North.	Hour-Angle from Merid. in Time.
D. M.	H. M. S.	D. M.	H. M. S.
0 0	5 8 21	13 0	6 13 55
0 30	5 10 55	13 30	6 16 28
1 0	5 13 29	14 0	6 19 1
1 30	5 16 2	14 30	6 21 35
2 0	5 18 35	15 0	6 24 10
2 30	5 21 7	15 30	6 26 45
3 0	5 23 39	16 0	6 29 21
3 30	5 26 11	16 30	6 31 58
4 0	5 28 42	17 0	6 34 36
4 30	5 31 13	17 30	6 37 15
5 0	5 33 43	18 0	6 39 54
5 30	5 36 13	18 30	6 42 34
6 0	5 38 44	19 0	6 45 16
6 30	5 41 14	19 30	6 47 59
7 0	5 43 44	20 0	6 50 42
7 30	5 46 14	20 30	6 53 27
8 0	5 48 44	21 0	6 56 13
8 30	5 51 14	21 30	6 59 1
9 0	5 53 45	22 0	7 1 50
9 30	5 56 15	22 30	7 4 41
10 0	5 58 46	23 0	7 7 32
10 30	6 1 16	23 30	7 10 26
11 0	6 3 47	24 0	7 13 22
11 30	6 6 18	24 30	7 16 20
12 0	6 8 50	25 0	7 19 19
12 30	6 11 22	25 30	7 22 19

Continuation

Continuation of a TABLE of JUPITER's Hour-Angles with the Meridian when 8° high, to every Half Degree of his possible Declinations, for the Latitude of Greenwich.

Ψ 's Declin. South.	Hour-Angle from Merid. in Time.	Ψ 's Declin. South.	Hour-Angle. from Merid in Time.
D. M.	H. M. S.	D. M.	H. M. S.
0 0	5 8 21	13 0	3 54 51
0 30	5 5 46	13 30	3 51 36
1 0	5 3 11	14 0	3 48 19
1 30	5 0 34	14 30	3 44 59
2 0	4 57 57	15 0	3 41 35
2 30	4 55 19	15 30	3 38 8
3 0	4 52 40	16 0	3 34 37
3 30	4 50 0	16 30	3 31 2
4 0	4 47 19	17 0	3 27 24
4 30	4 44 37	17 30	3 23 41
5 0	4 41 54	18 0	3 19 54
5 30	4 39 10	18 30	3 16 2
6 0	4 36 24	19 0	3 12 5
6 30	4 33 37	19 30	3 8 2
7 0	4 30 49	20 0	3 3 53
7 30	4 27 59	20 30	2 59 38
8 0	4 25 8	21 0	2 55 16
8 30	4 22 15	21 30	2 50 47
9 0	4 19 21	22 0	2 46 9
9 30	4 16 24	22 30	2 41 23
10 0	4 13 26	23 0	2 36 26
10 30	4 10 25	23 30	2 31 19
11 0	4 7 23	24 0	2 25 59
11 30	4 4 18	24 30	2 20 26
12 0	4 1 12	25 0	2 14 39
12 30	3 58 3	25 30	2 8 37

A TABLE

A TABLE shewing the Hour-Angles of the SUN with the Meridian or Apparent Time from Noon, when his Depression is 8° below the Horizon, to every Half Degree of Declination, for the Latitude of Greenwich.

Sun's Declination NORTH.			
Declin.	Hour Angle.	Declin.	Hour-Angle.
D. M.	H. M. S.	D. M.	H. M. S.
0 0	6 51 39	12 0	7 58 48
0 30	6 54 14	12 30	8 1 57
1 0	6 56 49	13 0	8 5 9
1 30	6 59 26	13 30	8 8 24
2 0	7 2 3	14 0	8 11 41
2 30	7 4 41	14 30	8 15 1
3 0	7 7 20	15 0	8 18 25
3 30	7 10 0	15 30	8 21 52
4 0	7 12 41	16 0	8 25 23
4 30	7 15 23	16 30	8 28 58
5 0	7 18 6	17 0	8 32 36
5 30	7 20 50	17 30	8 36 19
6 0	7 23 36	18 0	8 40 6
6 30	7 26 23	18 30	8 43 58
7 0	7 29 11	19 0	8 47 55
7 30	7 32 1	19 30	8 51 58
8 0	7 34 52	20 0	8 56 7
8 30	7 37 45	20 30	9 0 22
9 0	7 40 39	21 0	9 4 44
9 30	7 43 36	21 30	9 9 13
10 0	7 46 34	22 0	9 13 51
10 30	7 49 35	22 30	9 18 37
11 0	7 52 37	23 0	9 23 34
11 30	7 55 42	23 30	9 28 42
12 0	7 58 48		

Continuation of a TABLE shewing the Hour-Angles of the Sun with the Meridian or Apparent Time from Noon, when his Depression is 8° below the Horizon, to every Half Degree of Declination, for the Latitude of Greenwich.

Sun's Declination South.

Declin.		Hour-Angle.		Declin.		Hour-Angle.	
D. M.		H. M. S.		D. M.		H. M. S.	
0	0	6	51 39	12	0	5	51 10
0	30	6	49 5	12	30	5	48 38
1	0	6	46 31	13	0	5	46 5
1	30	6	43 58	13	30	5	43 32
2	0	6	41 25	14	0	5	40 59
2	30	6	38 53	14	30	5	38 25
3	0	6	36 21	15	0	5	35 50
3	30	6	33 49	15	30	5	33 15
4	0	6	31 18	16	0	5	30 39
4	30	6	28 47	16	30	5	28 2
5	0	6	26 17	17	0	5	25 24
5	30	6	23 47	17	30	5	22 45
6	0	6	21 16	18	0	5	20 6
6	30	6	18 46	18	30	5	17 26
7	0	6	16 16	19	0	5	14 44
7	30	6	13 46	19	30	5	12 1
8	0	6	11 16	20	0	5	9 18
8	30	6	8 46	20	30	5	6 33
9	0	6	6 15	21	0	5	3 47
9	30	6	3 45	21	30	5	0 59
10	0	6	1 14	22	0	4	58 10
10	30	5	58 44	22	30	4	55 19
11	0	5	56 13	23	0	4	52 28
11	30	5	53 42	23	30	4	49 34
12	0	5	51 10				

A SHIP sails from a given Latitude, and having sailed a certain Number of Miles, has altered her Longitude by a given Quantity, to find the Course steered.

The Logarithmic Cofine

In the Traverse Table, find the given Latitude among the Degrees, and the Difference of Longitude among the Distances; half the corresponding Departure will be the first Correction of the Course in Minutes, to be subtracted from the approximate Course, if the given Latitude is the lesser of the two, otherwise added.

The second and third Corrections subtracted from the approximate Course corrected by the first Correction will leave the true Course.

TABLE

TABLE A.

Course, or its Complement.

TABLE B.

Arc	10°	20°	30°	40°	50°	60°	70°	80°	90°
1°	3'	1'	1'	1'	0'	0'	0'	0'	0'
2°	12	6	4	2	2	1	1	0	0
3°	27	13	8	6	4	3	2	1	0
4°	47	23	14	10	7	5	3	1	0
5°	74	36	23	16	11	8	5	2	0
6°	107	52	33	22	16	11	7	3	0
7°	145	70	44	30	21	15	9	4	0
8°	190	92	58	40	28	19	12	6	0

Lat.	
0°	$\frac{1}{2}$
10°	$\frac{1}{2}$
20°	$\frac{1}{8} + \frac{1}{7}$
30°	$\frac{1}{8} + \frac{1}{7}$
40°	$\frac{1}{8} + \frac{1}{10}$
50°	$\frac{1}{4}$
60°	$\frac{1}{2}$
70°	$\frac{1}{8} + \frac{1}{10}$
80°	$\frac{1}{8}$
90°	$\frac{1}{8}$

EXAMPLE I.

Let a Ship sail 272 Miles or Minutes Northwards from the Latitude of 46° 20' North, till she has altered her Longitude 4° or 240' to find the Course.

Cofine Latitude — 9.83914
Log. Diff. Long. — 2.38021

Log. Dist. — 12.21935
2.43457

Appr. Course 37° 32' — 9.78478
Its Complement. 52 28

In the Traverse Table, the Departure belonging to Distance 240 and Course 46: 20 is 174, half which 87' or 1° 27' is the first Correction.

In Tab. A.

with 1° $\frac{1}{2}$ and 52° $\frac{1}{2}$ we find 1' the 2d Correction.
with 4 and 37° $\frac{1}{2}$ we find 11', $\frac{1}{4}$ of which (Tab. B.) is 3', the 3d Correction.

[E]

Approximate

Approximate Course — 37. 32

First Correction — —1. 27

36. 5

2d and 3d Corrections —4

36. 1 the true Course.

EXAMPLE II.

Let a Ship sail Southwards 272' from the Latitude of 50° of N. till she has altered her Longitude 240' to find the Course.

Cof. Lat. — 9. 80807

Log. Diff. Long. 2. 38021

12. 18828

Log. Diff. — 2. 43457

Appr. Course $34^{\circ} 33'$ 9. 75371

1st Cor. + 1 32

36 5

2d and 3d Cor. —4

36 1 true Course

In the Traverse Table, the Departure to Distance 240 and Course 50° is 184, its half 92' or $1^{\circ} 32'$ is the 1st Correction.

By Tab. A. the 2d Cor. is 1' The Number answering to 4° and $34^{\circ} \frac{1}{2}$ is 12', $\frac{1}{2}$ of which is 3' the 3d Correction.

If the Difference of Longitude and Distance do neither exceed 8° nor the Course 70° , the Approximate Course is always within 4° or $\frac{1}{2}$ of a Point of the Truth; and neglecting the second and third Corrections can never make an Error of $30'$.

Suppose no Observations could have been made of the Latitude for a few Days, yet if the Altitude of the Sun could be observed near the prime Vertical, the Time may thence be deduced very nearly, though the Latitude is not known within a Degree; and as the Longitude may be found by the Moon's Distance from a Star or the Sun, by the Help of this Problem we may find the Course, and consequently the Latitude, so that the dead Reckoning may be corrected from Observations of the Longitude as well as those of the Latitude.

Dr

Dr. Halley, at the End of his Treatise on the Analogy of the Logarithmic Tangents to the Meridian Line, proposes this Problem, which he says only remains to make this Doctrine complete; and adds, "The Solution thereof would be acceptable, if not to the Public, at least to the Author of this Tract, being likely to open some farther Light into the Mysteries of Geometry."

INVESTIGATION.

Put $G = \text{diff. Long.}$ $D = \text{Diff.}$

$a = \text{Lat.}$ A its Sine, and a its Cofine.

Course $= \beta$, B its Sine, and b its Cofine.

$z = \text{diff. Lat.} = D b$.

Then the meridional Parts (μ) between a and $a + z$ is equal to

$$\frac{z}{a} + \frac{A}{2a^2} z^2 + \frac{1+A^2}{6a^3} \times z^3 \&c.$$

$$\text{And } \frac{1}{\mu} = \frac{a}{z} - \frac{A}{2} - \frac{1+a^2}{12a} z \&c. = \frac{a}{D b} - \frac{A}{2} - \frac{1+a^2 D b}{12 a}.$$

$$\text{Therefore } \frac{B}{b} = \frac{G}{\mu} = \frac{a G}{D b} - \frac{A G}{2} - \frac{1+a^2}{12 a} D b G \&c.$$

$$\text{And } B = \frac{a G}{D} - \frac{A G b}{2} - \frac{1+a^2}{12 a} D b^2 G.$$

Suppose z to be an Arc whose Sine $E = \frac{a G}{D}$, and Cofine $= e$.

Let $\beta = z - x$

$$B = E - e x - \frac{E x^2}{2} \&c. \quad b = e + E x - \frac{e x^2}{2}.$$

Therefore

$$E - e x - \frac{E x^2}{2} = \frac{a G}{D} - \frac{A G e}{2} - \frac{A G E x}{2} + \frac{A G e x^2}{4} - \frac{1+a^2}{12 a} D G e^2.$$

Therefore $x = \frac{1}{2} A G$ nearly = 1st Correction.

[E] 2

Suppose

Suppose $x = \frac{1}{2} AG + y$. This substituted for x gives

$$y = \frac{EA^2G^2}{8} + \frac{1+a^2}{12a} DG e^2. \text{ And}$$

$$y = \frac{EA^2G^2}{8} + \frac{1+a^2}{12a} DG e^2 = \frac{Ex^2}{2} + \frac{1+a^2}{12} x \frac{G^2 e}{E}$$

$$= \text{Tang. } e \times \text{vs. } x + \text{Cot. } e \times \text{vs. } G \times \frac{1+a^2}{6} = 2d \text{ Cor.} + 3d$$

Cor.

The Numbers in Tab. B express $\frac{1+a^2}{6}$.

ADDITION

A D D I T I O N

TO

**Mr. DUNTHORNE's Solution of the Problem
for finding the Effect of Refraction and
Parallax.**

Communicated by Mr. DUNTHORNE.

IF we have the Distance of the Moon from the Sun, instead of a Star (and great Exactness be required) his Parallax in Altitude, taken from the following Table, must be subtracted from his Refraction, and only the Difference used in the room of the Refraction of a Star.

A TABLE of the Sun's Parallax in Altitude.

Altitude of the Sun.	Paral- lax.	Altitude of the Sun.	Paral- lax.	Altitude of the Sun.	Paral- lax.
0	//	0	//	0	//
5	9	30	8	60	4
10	9	35	7	65	4
15	9	40	7	70	3
20	8	45	6	75	3
25	8	50	6	80	2
30	8	55	5	85	1
		60	4	90	0

Farther

FARTHER ADDITION to R. DUNTHORNE'S Solution of the Problem for finding the Effect of Refraction and Parallax.

BUT in case the apparent Distance of the Moon from the Sun or a fixed Star exceeds 90° , the latter Part of the Solution will stand thus.

Then, to the Natural Cosine of the Difference of the apparent Altitudes add the Natural Cosine of the observed Distance, and find the Logarithm of the Sum, from which take the Logarithmic Difference before reserved, and you will have a Logarithm, from whose corresponding Number the Natural Cosine of the Difference of the true Altitudes being subtracted leaves the Natural Cosine of the true Distance required.

EXAMPLE.

(Being the 2d in Mr. LYONS'S Solution of this Problem).

The apparent Distance of the Moon's Center from the Sun's Center ————— 102 30
 The apparent Altitude of the Moon's Center ————— 27 30
 The apparent Altitude of the Sun's Center ————— 15 25

Difference of the apparent or observed Altitudes	12 5
Horizontal Parallax of the Moon $57' 3''$ whence	
Correction of her Altitude from Table I. $48' 47''$	
Refraction of the Sun $3' 25''$ Parallax of	
ditto $9''$, Difference	3 15
Sum to be added	52 3

Difference of the true Altitudes ————— 12. 57. 3

Natural Cosine of the Difference of apparent Altitudes 97.844

Natural Cosine of $102^\circ 30'$ the apparent Distance 21.440

Sum of the Natural Cosines ————— 119.4284

Logarithm thereof ————— 6.077108

Logarithmic Difference taken from Table II. 3144 }

Particle to be added from the little Tab. p. 66 01 }

Sum

THE ADULTERER'S PUNISHMENT
AND THE FATHER'S DUTY
IN THE LIGHT OF
THE NEW MORALITY

THE ADULTERER'S PUNISHMENT
AND THE FATHER'S DUTY
IN THE LIGHT OF
THE NEW MORALITY

THE ADULTERER'S PUNISHMENT
AND THE FATHER'S DUTY
IN THE LIGHT OF
THE NEW MORALITY

THE ADULTERER'S PUNISHMENT
AND THE FATHER'S DUTY
IN THE LIGHT OF
THE NEW MORALITY

THE ADULTERER'S PUNISHMENT
AND THE FATHER'S DUTY
IN THE LIGHT OF
THE NEW MORALITY

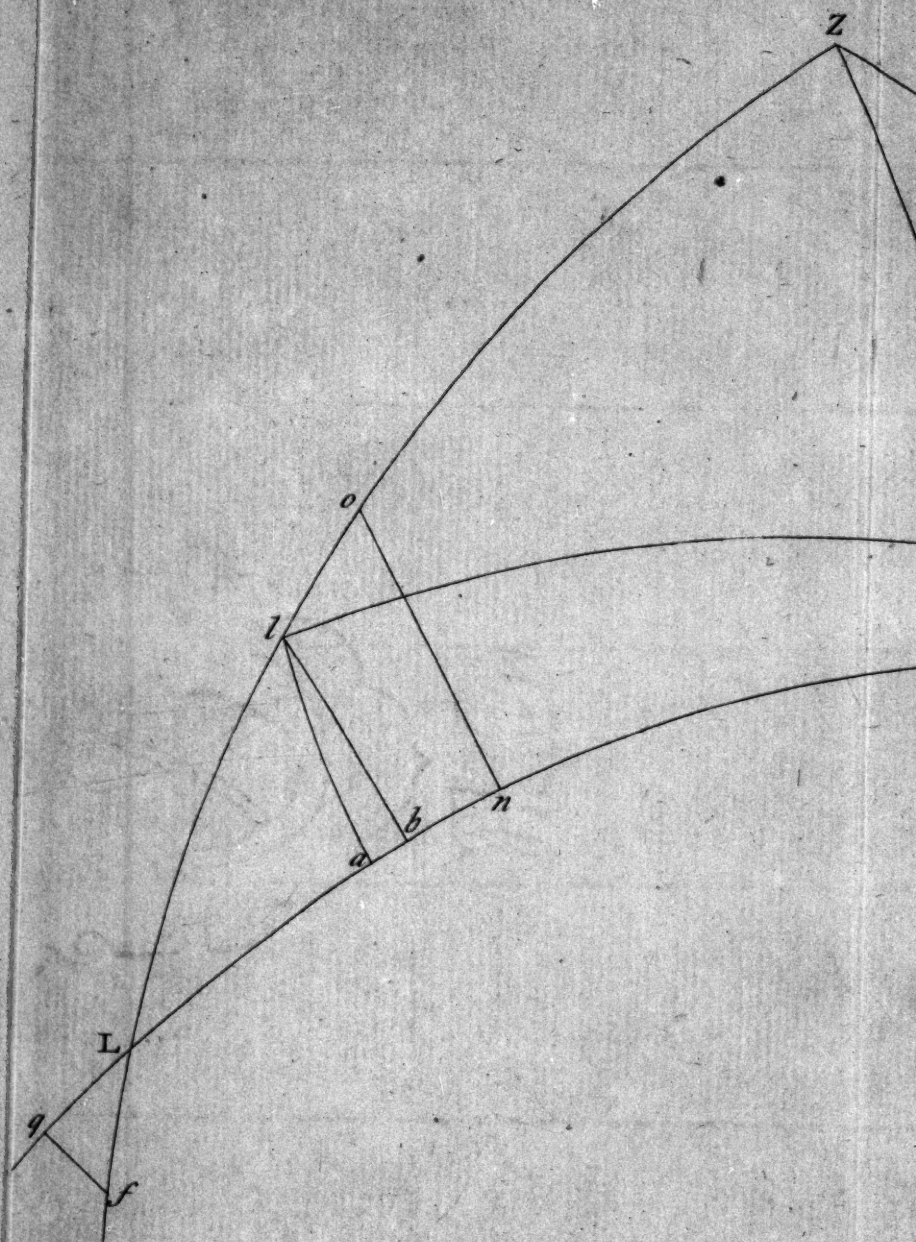


Tableau des

1795

1796

1797

1798

1799

1800

1801

1802

1803

1804

1805

1806

1807

1808

1809

1810

1811

1812

1813

1814

1815

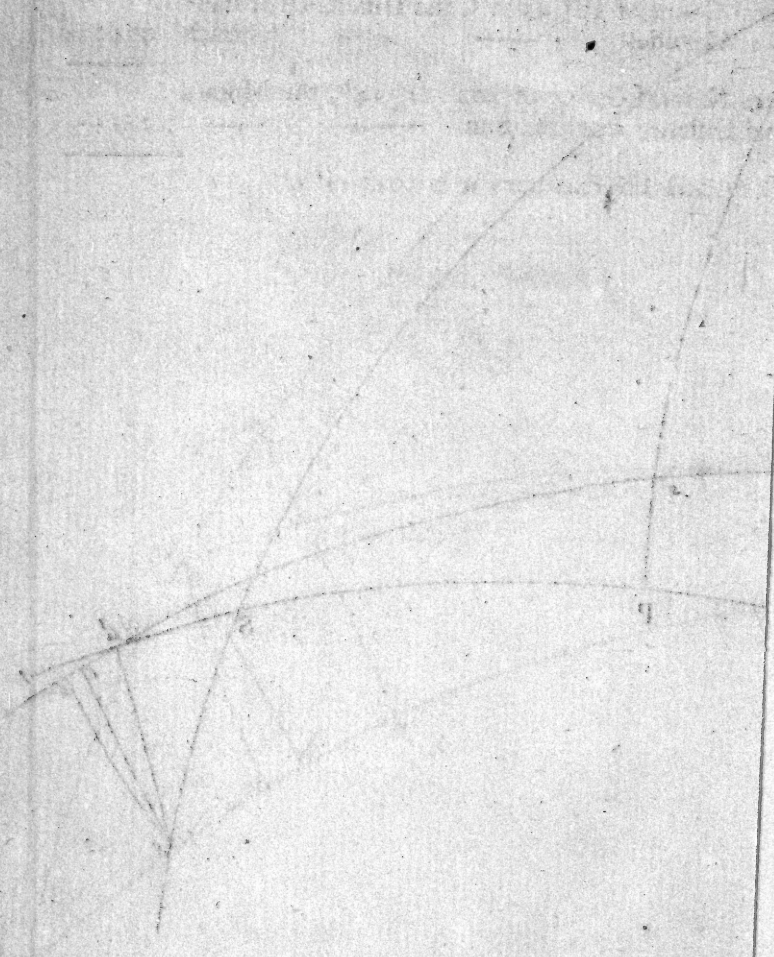
1816

1817

1818

1819

1820



Sum to be subtracted
 Remainder 6.073963
 Number corresponding thereunto 1185668
 Natural Cosine of $12^{\circ} 57' 3''$, the Difference of their
 true Altitudes subtract .974563
 Leaves Natural Cosine of $102^{\circ} 11' 14''$, the Moon's
 true Distance from the Sun 211105
 By Spherical Trigonometry it is $102^{\circ} 11' 9''\frac{1}{2}$.



ERRATA

ERRATA of the **TABLES** requisite to be used
with the **ASTRONOMICAL** and **NAUTICAL EPHE-**
MERIS.

Page 17. Mr. Lyons's first Table for Refraction.

N^o answering to 5° and 5' for 0069 read 0169
5 and 25 for 4106 read 4206
5 and 35 for 5350 read 5450
7 and 23 for 2711 read 2811
9 and 21 for 1975 read 1795
13 and 36 read 2266
17 and 71 for 2908 read 3008
19 and 69 for 2542 read 2592
24 and 65 for 1866 read 1816
25 and 75 for 1864 read 1884
27 and 44 for 0927 read 0947
33 and 42 for 0626 read 0656
34 and 43 for 0635 read 0645

Page 22. Line 13 and 15. for 9214 read 7764

Page 23. Line 4. for 30+15 read 50+25

Page 24. Line 12. for Prop. Log. of 15'. 32" 0.0653 read
Prop. Log. of 15'. 29" 1.0653

Mr. Dunthorne's Tables.

Page 58. against 29° under 53' for 303,5 read 305,5

Page 63. in Title (Hor. Par. D) over the last Column, for 61' read 62'

In the Table of Proportional Logarithms.

Log. of 29. 13 for 7996 read 7896
29. 14 for 7994 read 7894
56. 28 for 5735 read 5635
57. 30 for 4656 read 4956

Page 157. Line 24 and 25. the two Ar. Com. Sine are each put one Line too high.

Page 15. Declination of Capella for 45° 43' 39" read 45° 44' 9".

WORKS published by the COMMISSIONERS
OF LONGITUDE, and sold by *John Nourse* in
the *Strand*, and *Messieurs Mount and Page* on
Tower-hill.

I. **T**HE NAUTICAL ALMANACS
of 1767, 1768, 1769, 1770, 1771, and 1772.

II. TABLES requisite to be used with the NAUTICAL ALMANAC.

III. PRINCIPLES of Mr. JOHN HARRISON'S
WATCH, with PLATES of the same.

IV. An ACCOUNT of the Going of Mr. JOHN
HARRISON'S Watch at the ROYAL OBSERVATORY.

V. The METHOD of Constructing MURAL
QUADRANTS, exemplified by a Description of the
BRASS MURAL QUADRANT in the ROYAL
OBSERVATORY at *Greenwich*: To which is added,
The METHOD of dividing Astronomical Instru-
ments; by Mr. JOHN BIRD, Mathematical-Instru-
ment-Maker.

VI. TABULÆ MOTUUM SOLIS ET
LUNÆ NOVÆ ET CORRECTÆ,
AUCTORE TOBIA MAYER: Or, NEW
AND CORRECT TABLES OF
THE MOTIONS OF THE SUN
AND MOON, BY TOBIAS MAYER.

VII. THEORIA LUNÆ JUXTA SYS-
TEMA NEWTONIANUM, AUCTORE
TOBIA MAYER.

N. B. To the NAUTICAL ALMANAC of 1769 are
annexed Instructions relative to the Observation of
the Transit of Venus over the Sun's Disk on JUNE
3d, 1769: And to the NAUTICAL ALMANAC
of

of 1771 are added Tables for finding the Latitude from Two observed Altitudes of the Sun, with the Interval of Time, measured by a Watch; and new Tables for computing the Eclipses of Jupiter's Third Satellite: And to the NAUTICAL ALMANAC of 1772 are annexed Two Methods for clearing the apparent Distance of the Moon from the Sun or a fixed Star of the Effect of Refraction and Parallax, the one by the Rev'd NEVIL MASKELYNE, Astronomer Royal, and the other by Mr. GEORGE WITCHELL; and the Solution of a Problem in MERCATOR'S NAVIGATION, by ISRAEL LYONS.

IV. An ACCOUNT of the Going of Mr. JOHN HARRISON's Watch in the Royal Observatory.

V. THE METHOD of Computing Mean Quadrants, explained by a Description of the Mean Quadrant in the Royal Observatory at Greenwich: To which is added THE METHOD of finding Astronomical Refractions; by M. JAMES BRADLEY, Astronomer Royal.

VI. TABULÆ MOTUUM SOLIS ET LUNE NOVÆ ET CORRECTÆ ADUCTIONE TABULÆ MAYERIS, ET ALIIS CORRECTIS TABULIS OF THE MOTIONS OF THE SUN AND MOON, BY J. MAYER.

VII. THEORIA LUNÆ JUXTA SYSTEMA NEWTONIANUM, ADUCTIONE TABULÆ MAYERIS.

N.B. To the Nautical Almanac of 1772 are annexed Instructions relative to the Construction of the Table of Years, and the Table of Days, 3d. 1769: And to the Nautical Almanac

